

RCRA



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Clean Harbors Kansas, LLC
RCRA Permit Application
Section D
Use and Management of Containers

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Acronym Table

Clean Harbors Kansas, LLC (CHK)
Intermodal Container (IMC)
Container Management Unit (CMU)
Personal Protection Equipment (PPE)
Waste Analysis Plan (WAP)
National Fire Protection Association (NFPA)
United States Department of Transportation (USDOT)

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D Introduction:

The purpose of this section is to provide information regarding the design and operation of the various container management units at the Clean Harbors Kansas, LLC (CHK). This information is provided to fulfill the requirements of Kansas Administrative Regulations (KAR), Title 28, Article 31 as well as federal regulations as set forth in 40 CFR Part 264 Subpart I, and 40 CFR 270.15. The KAR incorporate, with few additions, the RCRA regulations contained in 40 CFR Parts 260 through 270. Therefore, this section will refer only to the federal regulations.

As used in this permit application, the term "drum" is intended to describe a specific type of container, namely a fifty-five (55) gallon drum, approximately twenty-three (23) inches in diameter and thirty-four (34) inches high. The term "bulk container" is used to describe any container with a capacity greater than 450 gallons. Roll-on/roll-off boxes, gondolas, sludge boxes and Intermodal Container (IMC)s are examples of types of bulk containers which may be managed at Clean Harbors Kansas, LLC.

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Otherwise, the term container, as used in this application, shall have the same meaning as that listed in 40 CFR 260.10.

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D-1 Summary Description:

Referenced Drawings

Drawing 50-01-10-001	Hazardous Waste Management Areas
Drawing 50-01-10-002	Material Containment Areas

There are seven (7) storage buildings which are subdivided into individual Container Management Unit (CMU)s at the CHK facility utilized for container storage and processing of hazardous waste; CMUs allow flexibility of management options within the various container storage buildings. Location of these storage buildings is shown on Figure D.1, Hazardous Waste Management Areas and individual CMUs are shown on Figure D.2, Material Containment Areas. Figures showing individual storage buildings are presented in Appendix D-A, Container Storage Buildings; corresponding drawings are located in Section Y, Referenced Drawings. Specific information regarding areal extent, capacity and drum equivalents is discussed in Section A (Part A Permit Application; Addendum B). Capacities of container

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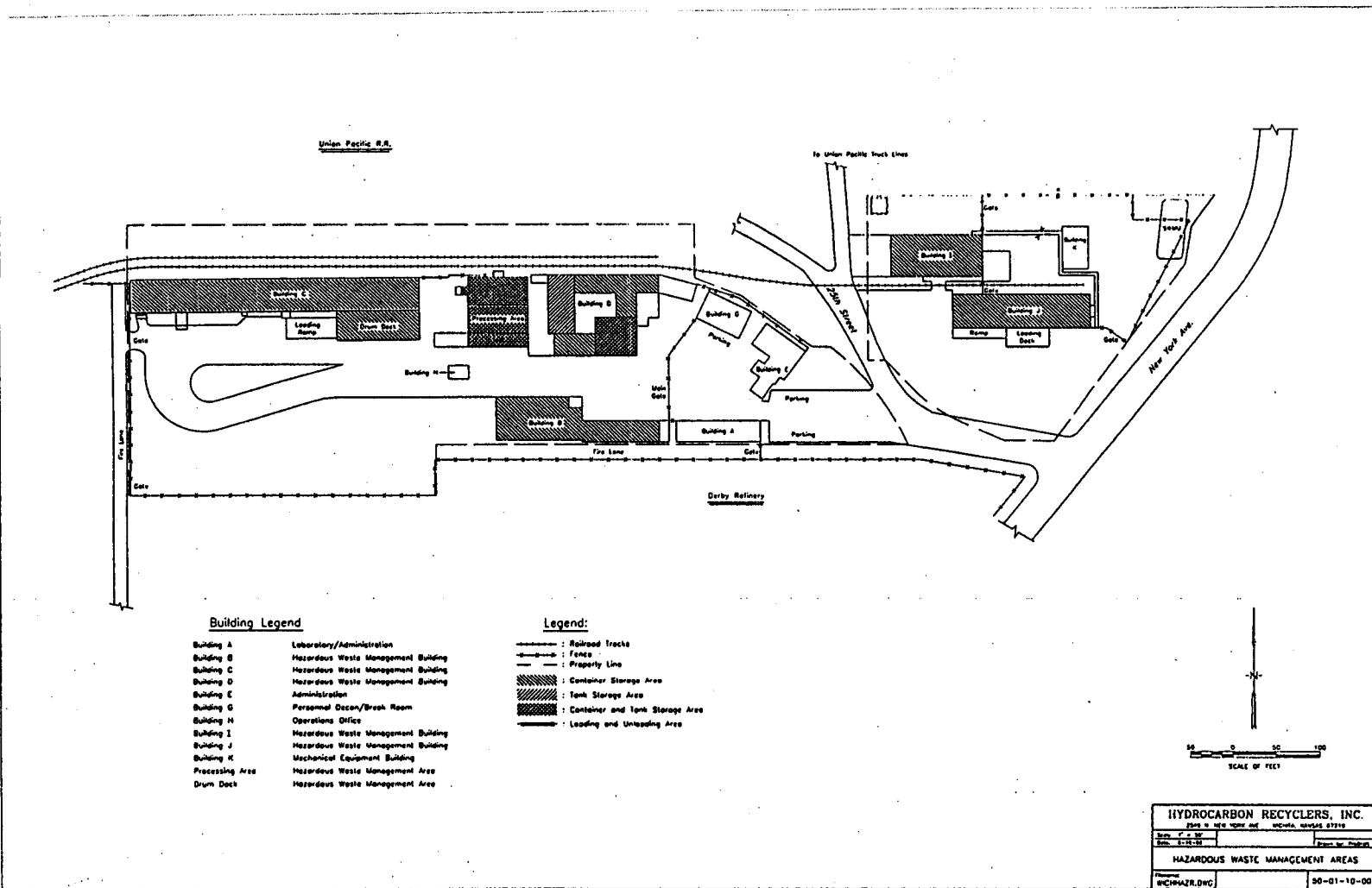


Figure D.1. Hazardous Waste Management Areas

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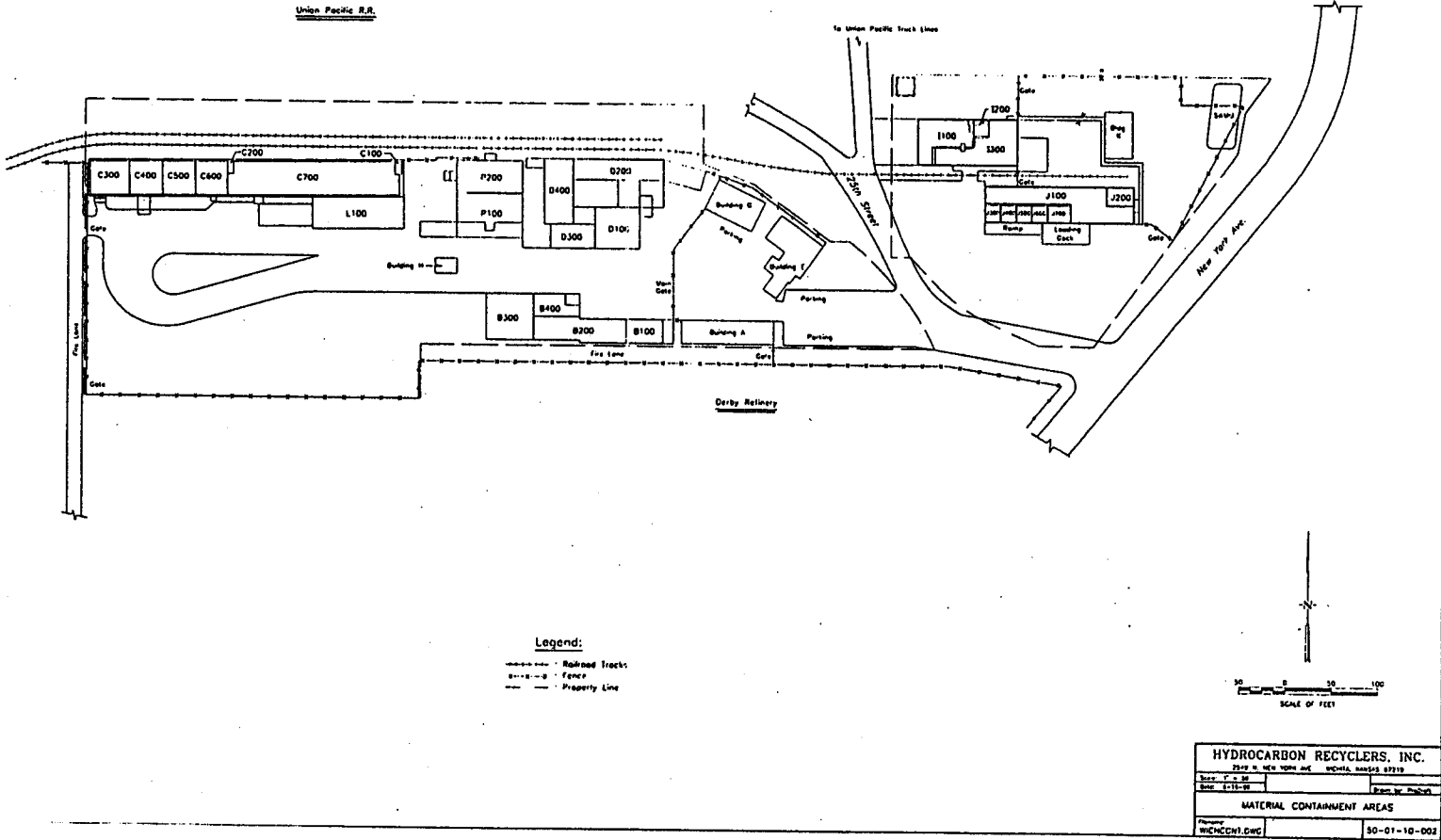


Figure D.2. Material Containment Areas

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storage buildings are summarized in Table D.1, Container Storage Building Capacities. Table D.2, CMU Containment Summary, presents containment capacities for each CMU. The total permitted capacity for storage of containers at the CHK facility is 325,490 gallons.

CHK has made the assumption, for design purposes, that all containers of hazardous wastes managed at LESW contain free liquid; thus, containment as prescribed in 40 CFR 264.175 is provided for all CMUs. The design does not preclude storage of wastes that do not contain free liquids.

40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10) percent of the volume of the containers in the unit, whichever is greater. Containment areas have been designed to meet this requirement. Secondary containment calculations are shown in Appendix D-B, Secondary Containment Calculations.

A wide variety of containers other than drums may be stored within the waste storage buildings. Wastes with free liquids may

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Table D.1

Container Storage Building Capacities

Container Storage Building	Materials Managed	Permitted Storage Capacity (Gallons)	Storage Capacity (55 Gallon Drum Equivalents)
Building D	Ignitable and/or non-ignitable or combination of both	46,640	848
Processing Area	Liquid and solid hazardous and/or non-hazardous materials	9,900	180
Building C	Ignitable and non-ignitable hazardous and non-hazardous materials	99,110	1,802
Drum Dock	Containerized materials	14,960	272
Building B	Corrosives and other non-ignitable hazardous and non-hazardous materials	55,000	1,000
Building I	Hazardous and non-hazardous materials	50,600	920
Building J	Hazardous and non-hazardous materials	49,280	896
Total Capacity		325,490	5,918

Note: Total capacity (gallons) is the additive container storage capacity for all storage buildings. Note that additional storage of waste in tanks occurs in some of these areas; permitted waste tank storage capacity is not reflected in this summary.

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Table D.2

CMU Containment Summary

Container Management Unit (CMU)	Maximum Number of Drums Stored (55 gallon drum equivalents)		Gallons - Containment Capacity Required for Containers (10 % Container Capacity)	Gallons - Containment Provided
	Drums	Gallons		
D100/D200	784	43,120	4,312	13,480
D300	64	3,520	352	3,606
P100/P200	180	9,900	990	32,583
C100	16	880	88	244
C200	16	880	88	192
C300	240	13,200	1,320	3,842
C400	184	10,120	1,012	3,195
C500	192	10,560	1,056	3,233
C600	192	10,560	1,056	3,233
C700	962	52,910	5,291	16,690
L100	272	14,960	1,496	1,835
B100	120	6,600	660	2,262
B200	384	21,120	2,112	5,592
B300	360	19,800	1,980	5,630
B400	136	7,480	748	2,582
I100	416	22,880	2,288	4,503
I200	64	3,520	352	635
I300	440	24,200	2,420	6,088

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J100	448	24,640	2,464	6,787
J200	96	5,280	528	987
J300	64	3,520	352	502
J400	64	3,520	352	502
J500	64	3,520	352	502
J600	64	3,520	352	502
J700	96	5,280	528	754

Note 1: These containment volume requirements do not include requirements for tank systems. The letter shown in the CMU identification number indicates the location by building (D - Building D, P - Processing Area, C - Building C, L - Drum Dock, B - Building B, I - Building I, and J - Building J).

Note 2: The largest container in Area I100 would be a 5,000 gallon tanker. The containment provided (5,399 gallons) is sufficient to hold the volume of this container.

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be stored in containers such as tote boxes, overpack containers, etc. The total volume of waste in containers is limited by the secondary containment volumes provided for each CMU and by the capacity of each storage building. The total volume of waste stored at the facility will not exceed the permitted amount (i.e., 325,490 gallons).

Containerized hazardous wastes are delivered to the facility by truck or rail car. These containers may be managed in unloading areas prior to waste storage. Railcar receipt and unloading will take up to 10 days. Similarly, loading and shipment of railcars off-site may take up to 10 days. On occasion, CHK will receive railcars, analyze the wastes, and remanifest the railcars off-site without off-loading. Clean Harbors Kansas, LLC may also transfer loads of containers from truck to rail under the 10-day transfer provisions (40 CFR 264.1(g)) without site receipt.

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Containers may be located within other waste management units and are used to accumulate and store site generated residues such as pump strainer residues, tank bottoms, in-line process materials, incidental spills, discarded Personal Protective Equipment (PPE), etc. CHK will manage these wastes according to the standards set forth in 40 CFR Part 262. Containers of on-site generated wastes will not

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be accumulated for more than ninety (90) days within these areas, and will be accumulated in containers complying with 40 CFR 264 Subpart I.

Storage building CMUs have been designed to receive many categories of waste streams in drums, overpacks, gondolas, tote boxes, etc. The number of segregated containment units provides the capability to store various waste types within certain units, and meet the requirements for managing reactive, ignitable and incompatible wastes. Any of the CMUs may be used to store any container type and volume as dictated by operational needs and compatibility requirements. Specifications regarding layout of these buildings are presented later in this section; brief descriptions of each storage building are provided below.

D-1a Building D:

The layout of Building D is designed to accommodate storage of wastes in containers and tanks (tank management is addressed in Section E, Tank Systems).

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Waste managed in this area may be processed or treated in containers as well as managed in one or more of the tanks or process units on site. Diking and berms divide this building into four (4) contained sections; three (3) of these sections are utilized for storage of hazardous waste in containers.

D-1b The Process Area:

The Process Area is designed to accommodate storage of wastes in containers and tanks (tank management is addressed in Section E, Tank Systems). Several process units are located there: the Drum Scraper, Drum Washing, and Dispersing Units (see Section M, Other Regulated Units). Waste managed in this area may be processed or treated in containers as well as managed in one or more of the tanks or process units on site. This building is managed as two operational areas which share common secondary containment.

D-1c Building C:

Building C is utilized for container storage, treatment, and management. Waste managed in this area may be processed or

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treated in containers. Diking divides this building into seven (7) contained areas.

D-1d Drum Dock:

The Drum Dock is utilized for container storage, treatment, and management. Waste managed in this area may be processed or treated in containers. Diking provides one (1) contained area in this building.

D-1e Building B:

Building B is utilized for container storage, treatment, and management. Waste managed in this area may be processed or treated in containers. Diking divides this building into four (4) contained areas.

D-1f Building I:

Building I is designated for container storage, treatment, and management. Waste managed in this area may be processed or

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treated in containers. Rooms and diking in this building will provide containment for three (3) separate CMUs.

D-1g Building J:

Building J is designated for container storage, treatment, and management. Waste managed in this area may be processed or treated in containers. Rooms and diking in this building will provide containment for seven (7) separate CMUs.

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D-2 Storage in Containers with Free Liquids:

D-2a General Area Design Features:

Waste storage buildings were constructed for industrial use and are generally of metal or cinder block fabrication. Buildings perform a variety of functions including control of access, ambient temperature, precipitation ingress, and wind effects such as dust generation.

The storage buildings are covered to minimize ingress of precipitation. The individual CMUs are constructed on concrete pads with perimeter curbs (diking) to contain potential spills, to prevent run-off, and to prevent run-on. Containment capacity is adequate to contain incidental precipitation (i.e., precipitation blown in).

Secondary containment consists of concrete diking/walls or block construction on concrete pads. Concrete pads and diking/walls that make up the secondary containment are maintained to prevent or repair cracks and gaps. All joints contain a continuous water stop or are otherwise sealed to prevent migration of liquids.

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Diking separates containment areas of individual CMUs. Waste containers are palletized or equipped with skids during storage, or are otherwise managed to protect the outside walls of the containers from contact with accumulated liquids. Concrete surfaces of the secondary containment systems are sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed.

Rooms have open areas which provide maneuvering room for mobile equipment such as forklifts, and, if needed, for staging and/or stacking of drums during pre-acceptance and processing.

D-2b Unloading Areas:

Containerized hazardous wastes are unloaded onto loading docks, loading areas, or directly into areas provided with secondary containment. Containers are placed into CMUs upon completion of unloading procedures or within 72 hours, whichever comes first. Appendix C-A provides a more detailed discussion of these procedures.

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Prior to placement in permitted storage, waste in containers will be managed in unloading areas and/or staged in an

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appropriate CMU. Containers arriving on-site by truck may be unloaded at any of the seven (7) storage buildings; rail spur shipments may be unloaded directly into Building C, Building D, Process Area, Building I, or Building J, or transferred to other buildings as needed. See Figure D.1, Hazardous Waste Management Areas, for location of unloading areas.

Two (2) buildings are equipped with truck loading docks. These docks are located on the south and west sides of Building J and to the west of the Drum Dock container storage area. Truck bays are located in Building I (I100) and the Process Area (P100).

Containers are moved in and out of the various buildings utilizing ramps installed to facilitate movement of equipment and materials over containment dikes.

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D-2c Building D:

Referenced Drawings

Drawing 50-16-10-001 Building D

Building D is designed to manage hazardous waste in tanks and containers in several CMUs (tank storage in this area is addressed in Section E, Tank Systems). Containerized wastes managed in this building include both ignitable and non-ignitable materials and combinations. These materials are destined either for on-site management, recycling as waste fuel, waste water management, solvent recovery, or transport off-site for additional management. Processing of containerized wastes in Building D may involve treatment in containers or management in any of the several on-site processing units. Some portable units (e.g., filters, etc.) may be present or used in this area.

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The principal processes which occur in Building D are decanting of liquids, treatment in containers, repackaging, bulking, phase separation, consolidation of solid residues, and loading and unloading of hazardous waste in containers.

D-2c(1) Secondary Containment:

Building D is divided into four operational areas: D100, D200, D300, and D400. Areas D100 and D200 share common secondary containment for containers. Areas D300 and D400 are independent, separated by diking or berms from each other and from D100/D200.

These areas are shown on Figure D.2, Material Containment Areas, and Figure D.3, Building D, presented in Appendix D-A (Drawing 50-16-10-001 in Section Y). The secondary containment areas are constructed of concrete floors and concrete or cinder block diking which are free of cracks and gaps. Additionally, the floor and diking of area D400 has been lined with a chemically resistant coating to comply with the requirements of 40 CFR 264.193. The CMUs are designed to meet

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the storage requirements for RCRA regulated wastes, to promote sound container management practices, and to minimize the potential for a release of hazardous waste into the environment.

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40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10) percent of the volume of the containers in the unit, whichever is greater. Any size container may be managed in a CMU provided that the maximum sized container does not exceed the CMU's containment volume. Detailed calculations supporting the secondary containment and storage volumes in Building D may be found in Attachment 1 of Appendix D-B.

D-2c(2) Building Design:

Building D consists of several rooms and its overall size is approximately one-hundred-fifty-four (154) feet long by one-hundred-ten (110) feet wide. Waste containers are palletized or equipped with skids during storage, or are otherwise managed to protect the outside walls of the containers from contact with accumulated liquids. Some management of containers may occur directly on the concrete floor (e.g., during processing). Concrete curbs or walls around the unit or portable containment units provide secondary containment. Adequate secondary containment volume is provided for this building as described in D-2c(1).

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D-2d Processing Area:

Referenced Drawings

Drawing 50-55-10-001 Processing Area

The Processing Area is designed to manage hazardous wastes in tanks and containers in two operational areas with shared secondary containment (storage in tanks is addressed in Section E, Tank Systems). Containerized wastes managed in this area include liquids which will be pumped to bulk storage and solids which will be handled in the Drum Processing Area. These materials are destined for on-site management, recycling as waste fuel, waste water management, solvent recovery, or transport off-site for additional management. Processing of containerized wastes in this area may involve treatment in containers or management in any of the several on-site processing units. Processing units (discussed in Section M, Other Regulated Units) permanently located in the Processing Area include: 1) the Drum Scraper Unit, 2) the Drum Washing Unit, and 3) the Dispersing Unit. Some portable units (e.g., filters, pumps, etc.) may be present or used in this area.

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The principal processes which occur in the Processing Area are decanting of liquids, treatment in containers, other physical treatment (including dispersing and scraping), repackaging, bulking, consolidation of solid residues, and loading and unloading of hazardous waste in containers.

Waste management in the container process line is briefly summarized below. Free liquids may first be decanted from containers. Decanting from containers may be performed on a conveyor or elsewhere in a CMU, using decanting wands, diaphragm pumps, or another suitable method. Containers may also proceed directly to the Dispersing Unit. When appropriate, containers which are found to contain solids or non-flowable sludges may bypass the Dispersing Unit and be returned to storage for alternate management, or for eventual shipment off-site, or loaded immediately for shipment off-site. Materials removed from containers are transferred to processing units, tankers, other containers, or tanks for blending, treatment, off-site shipment, or storage. Storage tanks are provided for low BTU liquids, chlorinated and nonchlorinated solvents, waste fuels, aqueous/solvent mixtures, and recovered solvents. The operation of the tank systems and

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the design of the Dispersing Unit are described in detail in
Section E, Tank Systems, and in Section M, Other Regulated Units,

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respectively. If, after decanting, a container is determined to be "RCRA empty" as per 40 CFR 261.7, it may be sent for recycling, for reuse, or for off-site disposal; containers may be crushed on-site prior to shipment for disposal. If a container holds RCRA regulated material that cannot be practicably removed, the container is further managed as RCRA waste. Materials removed from containers may be processed in the Dispersing Unit or in another appropriate unit. Waste solvent or fuel may be added to the wastes in the Dispersing Unit to enhance processing (e.g., breaking up lumps and rendering the waste pumpable). Pumpable wastes are then transferred to a storage tank or directly transported off-site for further management. After emptying, the container and any remaining residues will be managed as described above.

D-2d(1) Secondary Containment:

The Processing Area is divided into two (2) operational areas, P100 and P200. These two areas are managed as a shared secondary containment system. These areas are shown on Figure D.4, Processing Area, presented in Appendix D-A (Drawing 50-55-10-001 in Section Y). The CMUs are designed to meet the storage

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requirements for RCRA regulated wastes, to promote sound
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a release of

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hazardous waste into the environment. The CMUs are constructed of concrete floors and diking which are free of cracks and gaps. Additionally, the entire area has been lined with a chemically resistant coating to comply with the requirements of 40 CFR 264.193.

40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10) percent of the volume of the containers in the unit, whichever is greater. Any size container may be managed in a CMU provided that the maximum sized container does not exceed the CMU's containment volume. Detailed calculations supporting the secondary containment and storage volumes in the Processing Area may be found in Attachment 2 of Appendix D-B.

D-2d(2) Building Design:

The Processing Area consists of one CMU shared by two operational areas, and its overall size is approximately eight-three (83) feet long by seventy-one (71) feet wide. Waste containers managed in the Processing Area are palletized or equipped with skids during storage, or are otherwise managed to protect the outside walls of the containers

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from contact with accumulated liquids. Some management of containers may occur directly on the concrete floor (e.g., during processing). Concrete curbs or walls around the unit or portable containment units provide secondary containment. Adequate secondary containment volume is provided for this building, as described in D-2d(1).

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D-2e Building C:

Referenced Drawings

Drawing 50-15-10-001 Building C

Building C is designed to manage containerized wastes in seven (7) CMUs. Containerized wastes managed in Building C include ignitable and non-ignitable hazardous and non-hazardous wastes. These materials are destined for on-site management, recycling as waste fuel, waste water management, solvent recovery, or transport off-site for additional management. Processing of containerized wastes in Building C may involve treatment in containers or management in any of the several on-site processing units.

The principal processes which occur in Building C are storage, treatment in containers, repackaging, bulking, consolidation of solid residues, and loading and unloading of hazardous waste in containers.

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D-2e(1) Secondary Containment:

Building C is divided into seven (7) areas (CMUs) of secondary containment by diking. These areas are shown on Figure D.5, Building C presented in Appendix D-A (Drawing 50-15-10-001 in Section Y). The CMUs are designed to meet the storage requirements for RCRA regulated wastes, to promote sound container management practices, and to minimize the potential for a release of hazardous waste into the environment. The CMUs are constructed of concrete floors and diking which are free of cracks and gaps.

40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10) percent of the volume of the containers in the unit, whichever is greater. Any size container may be managed in a CMU provided that the maximum sized container does not exceed the CMU's containment volume. Detailed calculations supporting the secondary containment and storage volumes in Building C may be found in Attachment 3 of Appendix D-B.

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D-2e(2) Building Design:

Building C consists of seven (7) CMUs, and its overall size is approximately three-hundred-thirty-eight (338) feet long by forty (40) feet wide. Waste containers managed in Building C are palletized or equipped with skids during storage, or are otherwise managed to protect the outside walls of the containers from contact with accumulated liquids. Some management of containers may occur directly on the concrete floor (e.g., during processing). Concrete curbs or walls around the unit or portable containment units provide secondary containment. Adequate secondary containment volume is provided for this building, as described in D-2e(1).

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D-2f Drum Dock:

Referenced Drawings

Drawing 50-15-10-002 Drum Dock

The Drum Dock is designed to manage containerized wastes in one (1) contained area (CMU). Containerized wastes managed in this area include hazardous and non-hazardous materials. These materials are destined for on-site management, recycling as waste fuel, waste water management, solvent recovery, or transport off-site for additional management. Processing of containerized wastes in this area may involve treatment in containers or management in any of the several on-site processing units.

The principal processes which occur in the Drum Dock are storage, treatment in containers, repackaging, bulking, consolidation of solid residues, sampling, and loading and unloading of hazardous waste in containers.

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D-2f(1) Secondary Containment:

The Drum Dock is made up of one area (CMU); this area is diked to provide secondary containment. The area is shown on Figure D.6, Drum Dock presented in Appendix D-A (see Drawing 50-15-10-002). This CMU is designed to meet the storage requirements for RCRA regulated wastes, to promote sound container management practices, and to minimize the potential for a release of hazardous waste into the environment. The CMU is constructed of a concrete floor and diking which are free of cracks and gaps. Additionally, the CMU has been lined with a chemically resistant coating for added protection.

40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10) percent of the volume of the containers in the unit, whichever is greater. Any size container may be managed in a CMU provided that the maximum sized container does not exceed the CMU's containment volume. Secondary containment calculations for the Drum Dock are presented in Attachment 4 of Appendix D-B.

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D-2f(2) Building Design:

The Drum Dock consists of one (1) area (CMU), and its overall size is approximately ninety-four (94) feet long by twenty-seven (27) feet wide. Waste containers managed in the Drum Dock are palletized or equipped with skids during storage, or are otherwise managed to protect the outside walls of the containers from contact with accumulated liquids. Some management of containers may occur directly on the concrete floor (e.g., during processing). Concrete curbs or walls around the unit or portable containment units provide secondary containment. Adequate secondary containment volume is provided for this building, as described in D-2f(1).

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D-2g Building B:

Referenced Drawings

Drawing 50-14-10-001 Building B

Building B is designed to manage containerized wastes in four (4) contained areas (CMUs). Containerized hazardous wastes managed in these areas include corrosives and other non-ignitable materials. These wastes are destined for on-site management, recycling as waste fuel, waste water management, solvent recovery, or transport off-site for additional management. Processing of containerized wastes in this area may involve treatment in containers or management in any of the several on-site processing units.

The principal processes which occur in Building B are storage, treatment in containers, repackaging, bulking, consolidation of solid residues, sampling, and loading and unloading of hazardous waste in containers.

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D-2g(1) Secondary Containment:

Building B is made up of four (4) areas (CMUs); these areas are diked to provide secondary containment. The areas are shown on Figure D.7, Building B presented in Appendix D-A (Drawing 50-14-10-001 in Section Y). The CMUs are constructed of concrete floors, and concrete or cinder block diking which are free of cracks and gaps. The CMUs are designed to meet the storage requirements for RCRA regulated wastes, to promote sound container management practices, and to minimize the potential for a release of hazardous waste into the environment.

40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10) percent of the volume of the containers in the unit, whichever is greater. Any size container may be managed in a CMU provided that the maximum sized container does not exceed the CMU's containment volume. Containment calculations supporting the secondary containment and storage volumes in Building B are presented in Attachment 5 of Appendix D-B.

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D-2g(2) Building Design:

Building B consists of four (4) areas (CMUs), and its overall size is approximately one-hundred-eighty-eight (188) feet long by forty-nine (49) feet wide. Containerized wastes in Building B will be stored on pallets or otherwise managed to protect containers from contact with potential accumulated liquids. Some management of containers may occur directly on the concrete floor (e.g., during processing). Concrete curbs or walls around the unit or portable containment units provide secondary containment.

Adequate secondary containment volume is provided for this building, as described in D-2g(1).

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D-2h Building I:

Referenced Drawings

Drawing 50-17-10-001 Building I

Building I is an existing Interim Status waste management area that has undergone renovation. This section has been written to recognize the configuration and usage of Building I as it will be operated now that the renovations are completed.

Building I has been designed to manage containerized wastes in three (3) contained areas (CMUs). Containerized wastes managed in this building include ignitable, non-ignitable, reactive, non-reactive and other hazardous and non-hazardous wastes. These materials are destined primarily for off-site management, but may also be destined for on-site management, recycling as waste fuel, waste water management, or solvent recovery. Processing of containerized wastes in Building I may involve treatment in containers, repackaging or management in any of the several on-site processing units.

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The principal processes which occur in Building I are storage, treatment in containers, repackaging, bulking, consolidation, and loading and unloading of hazardous waste in containers.

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D-2h(1) Secondary Containment:

Building I is designed with three (3) CMUs (I100 through I300) which are diked or walled to provide secondary containment. The layout of Building I is shown on Figure D.8, presented in Appendix D-A. The CMUs are designed to meet the storage requirements for RCRA regulated wastes, to promote sound container management practices, and to minimize the potential for a release of hazardous waste into the environment. The CMUs are constructed of concrete floors and diking, and concrete block walls. Seams in the floor are sealed using water stops.

40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10)

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percent of the volume of the containers in the unit, whichever is greater. Any size container may be managed in a CMU provided that the maximum sized container does not exceed the CMU's containment volume. Detailed calculations supporting the secondary containment and storage volumes in Building I may be found in Attachment 6 of Appendix D-B.

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D-2h(2) Building Design:

Building I has been subdivided into three (3) CMUs. The building has an overall size of approximately one-hundred-six (106) feet long by forty-eight (48) feet wide. Waste containers managed in Building I are palletized or equipped with skids during storage, or are otherwise managed to protect the outside walls of the containers from contact with accumulated liquids. Some management of containers may occur directly on the concrete floor (e.g., during processing). Concrete curbs or walls around the unit or portable containment units provide secondary containment.

Adequate secondary containment volume is provided for this building, as described in D-2h(1).

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D-2i Building J:

Referenced Drawings

Drawing 50-18-10-001 Building J

Building J is an existing Interim Status waste management area that is currently undergoing renovation. This section has been written to recognize the configuration and usage of Building J as it will be operated when the renovations are completed.

Building J has been designed to manage containerized wastes in seven (7) CMUs. Containerized wastes managed in this building include ignitable, non-ignitable, reactive, non-reactive, and other hazardous and non-hazardous wastes. These materials are destined primarily for off-site management, but may also be destined for on-site management, recycling as waste fuel, waste water management, or solvent recovery. Processing of containerized wastes in Building J may involve treatment in containers, repackaging, or management in any of the several on-site processing units.

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The principal processes which occur in Building J are storage, treatment in containers, repackaging, bulking, consolidation, and loading and unloading of hazardous waste in containers.

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D-2i(1) Secondary Containment:

Building J is designed with seven (7) CMUs, (J100 through J700), which are all diked or walled to provide secondary containment. The layout of Building J is shown on Figure D.9 (Drawing 50-18-10-001) in Appendix D-A. The CMUs are designed to meet the storage requirements for RCRA regulated wastes, to promote sound container management practices, and to minimize the potential for a release of hazardous waste into the environment. The CMUs are (will be) constructed of concrete floors and diking, and concrete block walls. Seams in the floor are (will be) sealed using water stops.

40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10)

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percent of the volume of the containers in the unit, whichever is greater. Any size container may be managed in a CMU provided that the maximum sized container does not exceed the CMU's containment volume. Detailed calculations supporting the secondary containment and storage volumes in Building J may be found in Attachment 7 of Appendix D-B.

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D-2i(2) Building Design:

Building J has been subdivided into seven (7) CMUs. The building has an overall size of approximately one-hundred-sixty-two (162) feet long by forty (40) feet wide. Waste containers managed in Building J are palletized or equipped with skids during storage, or are otherwise managed to protect the outside walls of the containers from contact with accumulated liquids. Some management of containers may occur directly on the concrete floor (e.g., during processing). Concrete curbs or walls around the unit or portable containment units provide secondary containment. Adequate secondary containment volume is provided for this building, as described in D-2i(1).

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D-2j Bulk Container Storage:

Bulk containers such as IMCs, gondola boxes, roll-on/roll-offs, and sludge boxes may be delivered by truck directly to the facility or by rail to the site or to a nearby siding.

Containerized hazardous wastes are unloaded onto loading docks, loading areas, or directly into areas provided with secondary containment. Depending upon the volume of shipments arriving at the facility, the bulk containers may either be sampled upon arrival, or placed in a loading area or in one of the container storage areas prior to completion of the incoming load procedures. Bulk containers of wastes will be placed in a CMU within 72 hours of arrival at the site, with the exception of railcars. IMCs and other bulk rail containers holding wastes will be off-loaded within 10 days of arrival at the site.

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Transport vehicles hauling wastes (e.g., end dump trucks, van trailers, and tankers, with or without tractors) may be stored in the truck bay portion of the Processing Area or adjacent to Building I and/or Building J. After sampling and incoming load procedures are complete, the bulk containers may remain in

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storage, be managed on-site, or be shipped off-site for alternate management.

The truck bay is of sufficient width to allow adequate aisle spacing to be maintained along the side of the building and containment structure. Aisle spacing of approximately two (2) feet or more will be maintained between double rows or pallets of containers. This spacing will allow inspection along the sides of the containers for leaks and proper labeling. The maximum sized RCRA container managed in a CMU is limited to the CMU containment volume; adequate containment is provided in the truck bay for management of any size container or bulk transport vehicles in this CMU. Containment capacity for the truck bay is addressed in section D-2d(1), which discusses the Processing Area, of which the truck bay is a part.

Area I100 in Building I is designed to store up to two bulk containers (e.g., tanker, gondola, etc.) or van trailers. Adequate containment is provided in Area I100 for storage of up to two bulk containers plus additional containers, maintaining aisle space of at least two feet. At no time will the maximum storage exceed the permitted capacity identified in Table D-2.

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Secondary containment capacity is discussed in Attachment D.8 and
Section D-2h.

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D-3 General Container Management Practices:

D-3a Description of Containers:

The CMUs are capable of receiving and processing containers, both new and used, of various materials of construction, sizes, and capacities. The volume of individual containers managed in the CMUs is typically 450 gallons or less, except in the truck bay area, Building C, Building D, Building I, and in the Process Area where, after processing, wastes may be placed into bulk containers which may have volumes up to fifty-four (54) cubic yards. A wide variety of other containers, such as paint cans, Marino bags, wooden cases, plastic tote tanks, and glass bottles may also be received.

Bulk containers managed on-site include, but are not limited to, IMCs, sludge boxes, gondolas, tankers, end dumps, and railcars. Some storage areas have secondary containment and design capabilities for bulk containers. Bulk containers may be used for virtually any of the waste types handled at the facility. LESW will not place wastes into an unwashed container that has previously held incompatible wastes.

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D-3b Handling of Containers: 40 CFR 264.173.

The majority of containers managed at the CHK facility are expected to be drums or similar containers delivered in van trailers. An industrial truck equipped with drum handling forks or a single container hand trolley will generally be employed to unload non-palletized shipments. Palletized containers will generally be unloaded with an industrial truck equipped with forks. Other container movement equipment may be used as available and appropriate. Ramps will be used as necessary during transfer operations to facilitate movement of materials in and out of CMUs.

Containers may be moved within the facility by hand, by industrial truck, truck, railcar, or by other safe and appropriate means (e.g., conveyor). The specific method employed will be dependent on the distance, and the quantities and sizes of containers to be moved.

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When moving containers between storage areas, loading areas, and/or process areas, the facility may need to temporarily stage containers prior to transfer to the next unit. This staging will generally occur in the unloading areas or in the area between Building C and the Processing Area. All staging will occur in paved areas. This staging of containers will not exceed one shift or eight hours.

Equipment is available to facilitate such operations as the transfer of wastes from a damaged container to a container in good condition, the manual repackaging of containers, the transfer of leaking containers into overpacks, and the removal of individual containers from CMUs.

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During the unloading procedure, the containers will be visually checked. Those containers selected for sampling and analysis will be opened and sampled as described in Section C, Waste Characterization, Appendix C-A, Waste Analysis Plan (WAP).

Sampling may occur on the unloading platform, in the working area, in a CMU or, prior to unloading, on the transport vehicle.

Once samples have been obtained, the containers will be re-closed and will remain staged or be placed in a CMU until incoming load procedures are completed in accordance with the WAP. Containers which are not already in a containment unit will be moved into a CMU after the incoming load procedures are completed and the waste stream is accepted. If incoming load procedures cannot be completed in 72 hours, containers will be placed in an appropriate CMU, based on manifest, pre-acceptance, and other information available about the waste. If subsequent analytical or other information identifies a compatibility problem, the container will be moved to an appropriate CMU, rejected and returned to the generator, or transferred to another facility capable of handling the material.

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Containers will be opened by one of a variety of methods. Liquid storage containers equipped with screw-in bungs in the lids will generally be sampled by removing the bung, withdrawing a sample and replacing the bung. Containers with fully removable tops (i.e., with retaining rings) will generally be opened by removing the lid and ring, sampling and replacing the lid and ring.

Containers are normally kept closed during storage. However, they may be opened for:

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- . inspection,
- . sampling,
- . treatment within the containers, and/or
- . removal/addition of material.

Regularly scheduled inspections of the CMUs, loading/unloading areas, and processing areas are conducted to facilitate detection of open or deteriorating containers, improper storage in the CMUs, liquids on the floors or in sumps, or other improper conditions as outlined in Section F, Inspection Plan. The frequencies of these inspections are defined in the Inspection Plan.

Hazardous and non-hazardous wastes may be stored within the same CMU, but they will not be stored on the same pallet, except insofar as they have been received on the same pallet (e.g., lab packs, wrapped pallets, etc.). The Waste Tracking System will provide a record of the location of all wastes at the facility. This report will be available for facility personnel and inspectors to identify the location of both hazardous and non-hazardous wastes at the facility.

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For purposes of meeting the requirements of 40 CFR 268.50,
containers are dated during the incoming load or off-loading
procedures.

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As the newly proposed second phase of the air emission standards for hazardous waste facilities becomes final, CHK will address and implement air emission control devices for the affected container management activities as applicable.

D-3b(1) Containers - 55 Gallon or Larger:

At times, 55 gallon or larger containers may be stacked two (2) high (double-stacked), providing that the wastes are compatible and that such stacking is consistent with the National Fire Protection Association (NFPA) code for flammable storage.

Inspection aisles of two (2) feet or more in width will be maintained between adjacent double rows of 55-gallon or larger containers in CMUs.

The bottom layer of containers in storage are placed on pallets or skids, or are otherwise managed to prevent contact of containers with any accumulated liquids. Rows will be no more than two (2) 55-gallon or larger containers wide. Dividers such as wooden pallets or plywood sheeting may be placed on top of the bottom row(s) of

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drums. A second layer of containers may be placed on top of the bottom row.

D-3b(2) Containers - Smaller Than 55 Gallon:

Smaller containers, particularly those small volume containers such as pint, quart, gallon, and five (5) gallon sizes, may be stored in stacks more than two (2) high, and will frequently be received that way. Any stacking of containers not specifically regulated by the NFPA code will be performed with safety of personnel uppermost in mind. Stacking of containers of less than fifty-five (55) gallon capacity will be restricted to a height not to exceed six (6) feet to facilitate inspection. This does not preclude, as an accepted management practice, the placing of large numbers of small containers within drums or larger overpack containers, and the double stacking of these larger containers, nor the storage of individual containers which may exceed a height of six (6) feet, nor the stacking of palletized small containers. The total volume of containers of wastes with free liquids will not be allowed to exceed that allowed by the secondary containment capacity.

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Where applicable, inspection aisles of two (2) feet or more in width will be maintained in CMUs between adjacent rows of pallets of containers that hold less than 55 gallons.

The Waste Tracking System will provide a record of the location of each container of waste received at the facility, including those containers that are arranged or stacked in such a way that not all labels may be visible from the aisle. The Waste Tracking System will be updated at least once each day that containers of waste are moved.

D-3c Waste and Container Compatibility: 40 CFR 264.172

Wastes accepted for storage, treatment, or other management are required to be compatible with the containers used to store them. Acceptable containers for acidic wastes may include those made of plastic, steel lined with plastic, or fiberglass. Acceptable containers for other wastes include, but are not limited to, steel, fiberglass, plastic, steel lined with plastic, and fiber drums and boxes, wooden cases, and fiber sacks. Solvent wastes are frequently stored in steel drums bearing DOT identification of 17 E or H. Alkaline wastes may be stored in plastic

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containers or containers manufactured from carbon steel. Fiber sacks may be used to store, among other materials, contaminated debris or soils. New types of containers are routinely being developed and approved by the United States Department of Transportation (USDOT); USDOT and Performance Oriented Packaging Standards will dictate the shipment in, and use of, alternate containers meeting regulated performance requirements. CHK may receive waste in any appropriate USDOT

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approved or performance specified container for management at the facility. Site-generated waste may be accumulated in specially designed containers specific to the plant process equipment.

D-3d Condition of Containers: 40 CFR 264.171

Facility personnel will inspect all containers for evidence of leakage, deterioration, or severe corrosion as part of the incoming load and unloading procedures at Clean Harbors Kansas, LLC. Containers are also routinely inspected while in storage. Inspection schedules are discussed in Section F, Inspection Plan.

Containers exhibiting evidence of leakage, deterioration which would affect the structural integrity of the container, or severe corrosion will be transferred into overpacks, or containers in good condition, or the wastes may be transferred directly into tanks or treatment units. Open containers, improper storage in CMUs, and evidence of spills and leaks are among the focal points of inspections. Transporters of Hazardous Waste are required to meet the specifications in the USDOT regulations in 49 CFR Part 178 Subparts A through J, 49 CFR 173 Subparts J through O, and the requirements of 49 CFR 172.101 with respect to design and use of containers. Changes in these and other regulations brought

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about by USDOT's Performance Oriented Packaging Standards will be observed, by CHK or generators sending shipments of waste to CHK, as they are made effective.

Any containers found to be inadequately or improperly identified or deficient in the required information may be staged in a holding area until the deficiency can be resolved.

D-3e Response to Leaks: 40 CFR 264.171

Because the secondary containment system is designed to prevent storm water run-on, liquids found on the floor of a CMU will be either blown precipitation or leaks of stored materials. When an inspection reveals liquid within a contained area, the source will be identified if possible. If liquids are discovered, they will be removed within twenty-four (24) hours of detection, or as soon as practical. The identification of the origin of the liquid may be accomplished in a number of ways, using a variety of inspection techniques. Visual inspection of the condition of containers for localized staining or leakage adjacent to a particular container is the technique most likely to be employed to trace the source of a leak. If this measure

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fails, a sample of the liquid in the containment area will be analyzed for a range of parameters based upon the possible contents of the containers in the affected CMU. This process should indicate the waste stream type from which the leaking waste may have originated. All containers holding that waste stream type within the CMU will then be checked for leaks until the leak is found.

Wastes from the leaking container will be managed as described in D-3d. Liquid in the containment area may be transferred to an appropriate container, or to one or more storage tank(s), using a portable pump. Other suitable methods using absorbents, vacuum systems, etc., may also be used to manage spills. Any container into which wastes are transferred will be appropriately identified as to the type of waste stored in it. Minor quantities of liquids may be absorbed, collected, and placed in an appropriately identified container.

**D-3f Special Requirements for Ignitable and Reactive Wastes: 40
CFR 264.176.**

Ignitable and reactive wastes will be segregated from incompatible materials within CMUs. Segregation may involve placement in separate CMUs,

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or use of portable secondary containment units. Containers of ignitable or reactive wastes are stored at least fifty (50) feet from the

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facility property boundary. CMUs that may contain ignitable or reactive wastes include C100, C200, C400, C500, C600, C700, L100, P100, P200, D100, D200, D300, D400, I200, I300, I400, J100, J200, J300, J400, J500, J600, J700, and all but the west twenty-five (25) feet of I100. Because of the requirements of 40 CFR 264.176, ignitable or reactive wastes will not be stored in CMUs C300, B100, B200, B300, B400, and the west twenty-five (25) feet of I100. Measures to prevent accidental ignition of ignitable wastes include the prohibition of smoking, use of non-sparking tools, and enforcement of procedures to control burning and welding in areas where these wastes are stored. Section F, Inspection Plan, addresses these procedures in detail.

D-3g Special Requirements for Incompatible Wastes: 40 CFR
264.177.

During unloading procedures, the containers will be visually checked. Those containers selected for sampling and analysis will be opened and sampled as described in the WAP (see Section C, Waste Characterization). Sampling may occur on the unloading platform, in the working area, in a CMU, or prior to unloading, on the transport vehicle. Once samples have been obtained, the containers will be re-closed and will remain staged in accordance

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with the WAP until the incoming load procedures are completed. If incoming load procedures are not completed within 72 hours, the containers will be transferred into an appropriate CMU, as determined using available information (e.g., manifest, Waste Profile Sheet, etc.).

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Containers which are not already in a CMU will be moved into a CMU after the incoming load procedures are completed or within 72 hours. Should a container of waste be determined to be incompatible with the other wastes stored in a CMU as a result of analysis, it will be segregated from incompatible wastes. Portable containment units may be used to facilitate segregation.

Each RCRA CMU is equipped with secondary containment. These containment systems have sufficient capacity to contain a minimum of ten (10) percent of the volume of the maximum container capacity of wastes with free liquids permitted for storage in that unit. Wastes which are incompatible may be stored in adjacent CMUs separated by either diking, building walls, or other device.

The seven (7) container storage buildings are subdivided into individually contained CMUs. Adjacent CMUs may be used to manage incompatible wastes. The CMUs are used interchangeably. The criteria for CMU selection for storage of a specific waste type is based upon considerations of chemical compatibility, storage unit capacity, and operational demands.

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To ensure that residues from wastes previously stored in a CMU do not contact potentially incompatible wastes about to be placed in the CMU, the following procedure will be observed. The CMU will be visually inspected when containers are removed for compatibility service change, and will be cleaned if evidence of a spill is found prior to placement of the next waste into the CMU for storage.

CHK may transfer wastes from one container to another. In accordance with 40 CFR 264.177(b), hazardous waste will not be placed in an unwashed container that previously held an incompatible waste or material, except when that placement constitutes known and planned treatment as discussed in Section D-5, Treatment in Containers.

D-3h Transshipment of Containers of Waste:

The majority of wastes received at the CHK facility will be stored, processed, and shipped off-site. However, some wastes, primarily waste in drums, which are intended for treatment or direct disposal at off-site facilities, may be temporarily stored at CHK.

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The facility may occasionally serve as a 10-day transfer station for wastes destined for incineration, disposal, or other management at another facility. This 10-day transfer will comply with the requirements of 40 CFR 263.12 and 264.1(g)(9). 10-day transfer stations are not subject to the permit requirements of 40 CFR 270 (see 40 CFR 270.1(c)(2)(vi)).

10-day transfer wastes may remain at the site for a period not to exceed ten (10) days prior to continuing the journey to the designated treatment, storage, or disposal site. 10-day transfer loads remain "in transit" during the entire stay at the site. These wastes may be off-loaded and transferred to another vehicle or to a railcar. Because these 10-day transfer loads are never accepted into the CHK waste management system, no analyses are performed on the loads. They will, however, be identified in the Waste Tracking System.

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D-4 Storage in Containers without Free Liquid: 40 CFR
264.175(c), 270.15(b).

CHK has made the assumption, for design purposes, that all containers of wastes managed at the CHK facility contain free liquid. Waste without free liquid is managed as appropriate for the waste code(s) carried. Management of containerized wastes without free liquids does not require containment (40 CFR 264.175(b)(3)); however, containers containing no free liquids may be managed in any container storage area on-site. Future operations may include storage areas without containment for exclusive storage of containers (including bulk containers) without free liquids.

D-5 Treatment in Containers

CHK may perform controlled treatment in containers (e.g., neutralization, phase separation, blending, phase change, etc.) in any of the permitted CMUs at the facility. Containers will remain open only for as long as is necessary to ensure complete and safe treatment. In general, treatment in containers will

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involve the container being open for between one and four hours, although treatment in bulk containers may take as much as 24 hours.

Treatment in containers will involve the following steps:

- . open the container;
- . add materials or other wastes to serve as treatment reagents;
- . mix the material in the container, as necessary;
- . allow sufficient time for the reaction to be complete, and for any cooling, hardening, or other effects to occur as desired;
- . observe the contents of the container and sample and analyze the treated mixture, as appropriate;
- . if treatment is determined to be incomplete, repeat the four previous steps;
- . when treatment is complete, close the container or transfer the contents to another container or tank.

Treatment in containers is performed to enable safer or more efficient handling of a waste or to prepare a waste for

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subsequent processing. Treatment in containers may result in elimination of hazardous characteristics. In the event that this results in removal of a waste code from a waste, CHK will use a Kansas certified laboratory to perform the analytical procedures.

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Use and Management of Containers
Appendix D-A - Container Storage Buildings

Appendix D-A

Container Storage Buildings

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Appendix D-A

Container Storage Buildings

List of Figures

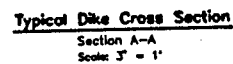
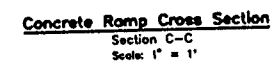
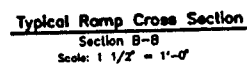
- Figure D.3, Building D**
- Figure D.4, Processing Area**
- Figure D.5, Building C**
- Figure D.6, Drum Dock**
- Figure D.7, Building B**
- Figure D.8, Building I**
- Figure D.9, Building J**

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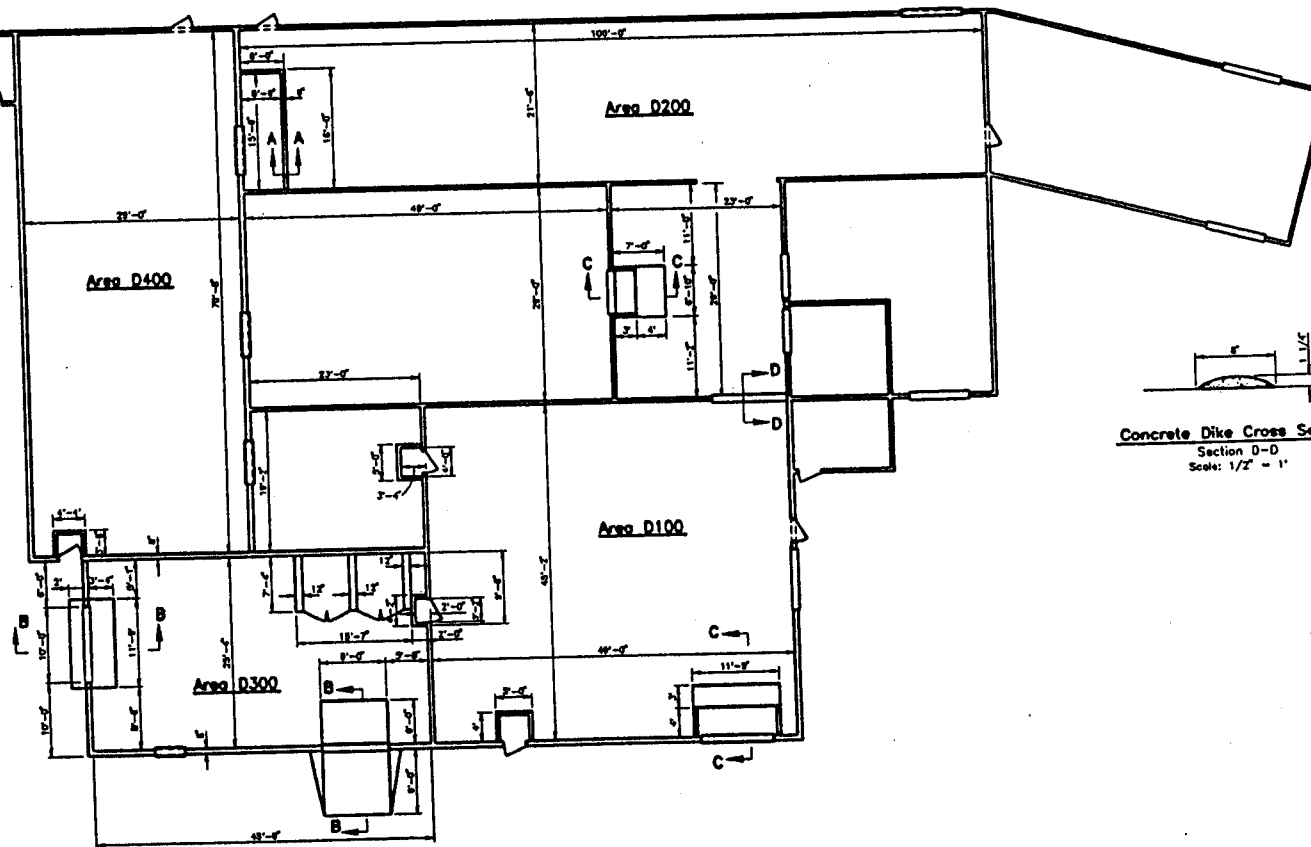
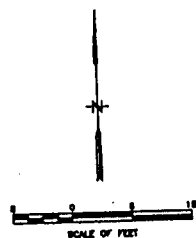
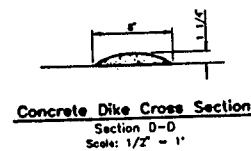
Clean Harbors Kansas, LLC
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Figure D.3,
Building D

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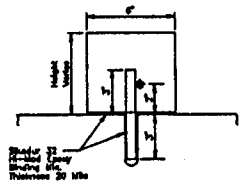
- Notes:
1. 3000 PSI concrete
 2. No. 4 rebar on 24" centers
 3. Ramps furnished and installed by HNTB
 4. Concrete to be sandblasted where epoxy bonding goes



Clean Harbors Kansas, LLC
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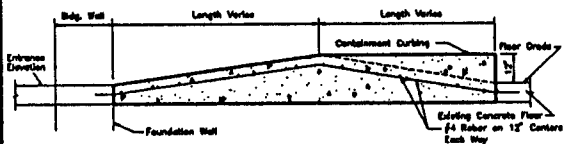
Figure D.4
Processing Area

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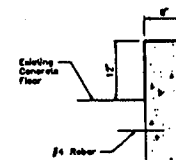


Typical Dike Cross Section
Section D-D
Scale: 1" = 1'

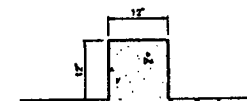
Notes:
1. 3000 PSI concrete
2. No. 4 rebar on 12" centers
3. Ramps finished and installed by HRC
4. Concrete to be sandblasted where epoxy bonding goes



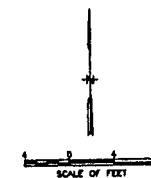
Typical Concrete Ramp Cross Section
Section C-C
Not to Scale



Typical Curb Cross Section
Section A-A
Scale: 1" = 1'



Typical Curb Cross Section
Section B-B
Scale: 1" = 1'



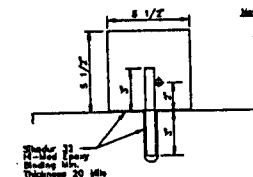
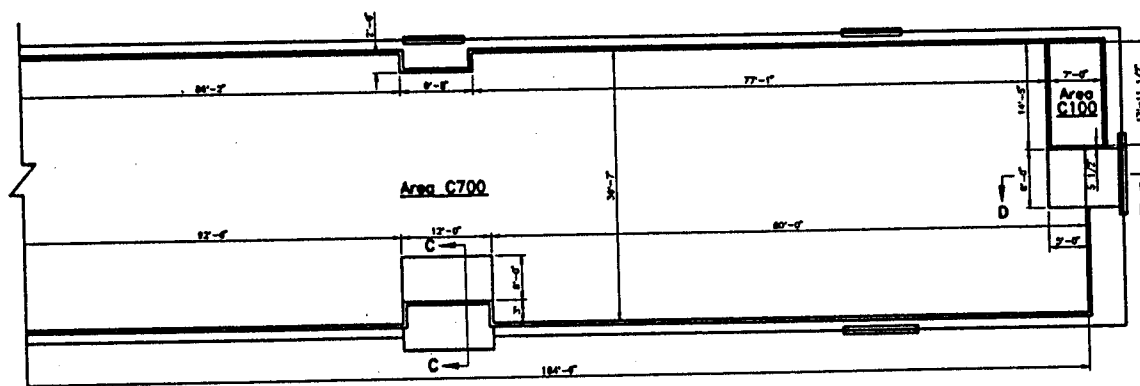
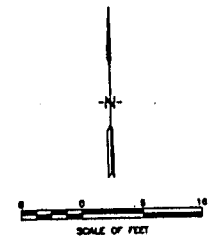
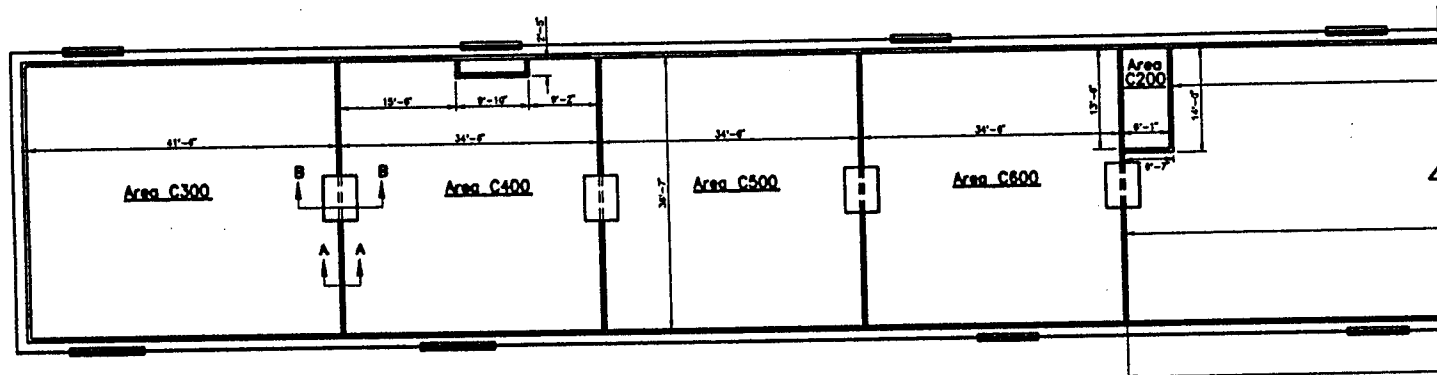
HYDROCARBON RECYCLERS, INC.	
2549 N. NEW YORK AVE. WICHITA, KANSAS 67219	
Scale: 3/16" = 1'-0"	Drawn by: Probst
Date: 8-18-88	
PROCESSING AREA	
50-55-10-001	

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Figure D.5

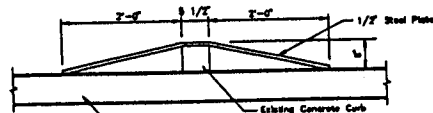
Building C

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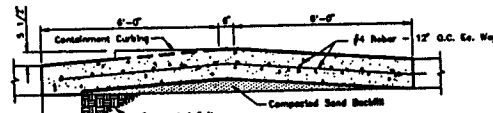


- Notes:
1. 3000 PSI concrete
 2. No. 4 rebar on 12" centers
 3. Ramps furnished and installed by HRC
 4. Concrete to be sandblasted where epoxy bonding goes

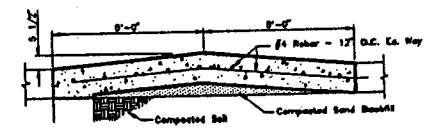
Typical Dike Cross Section
Section A-A
Scale: 3" = 1'



Typical Steel Ramp Cross Section
Section B-B
Scale: 1" = 1'



Concrete Ramp Cross Section
Section C-C
Scale: 1/2" = 1'



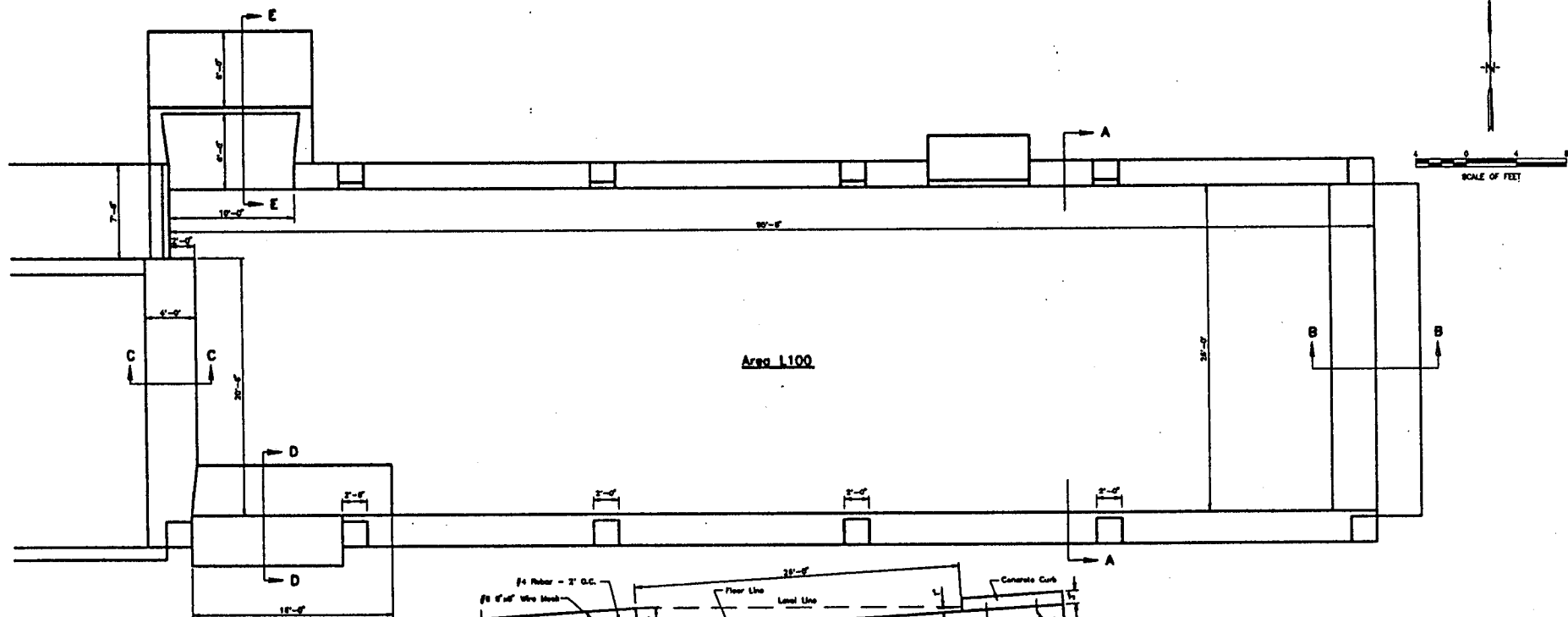
Concrete Ramp Cross Section
Section D-D
Scale: 1/2" = 1'

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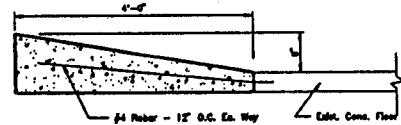
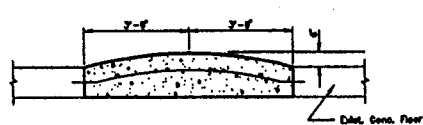
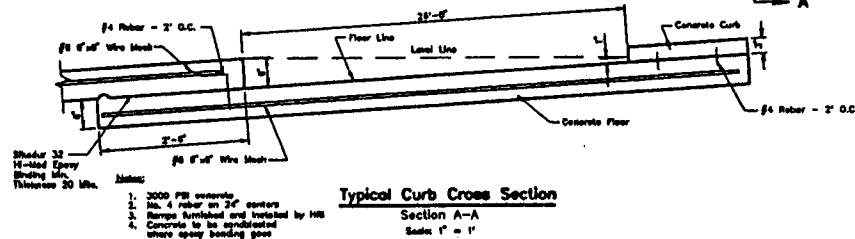
Figure D.6

Drum Dock

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Area 1100

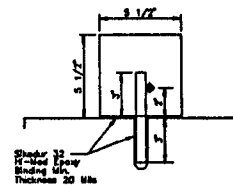


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Appendix D-A - Container Storage Buildings

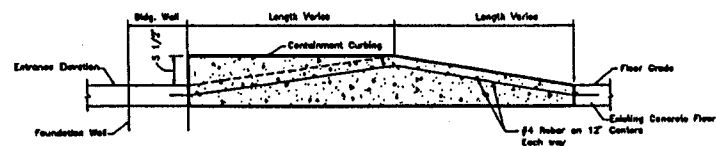
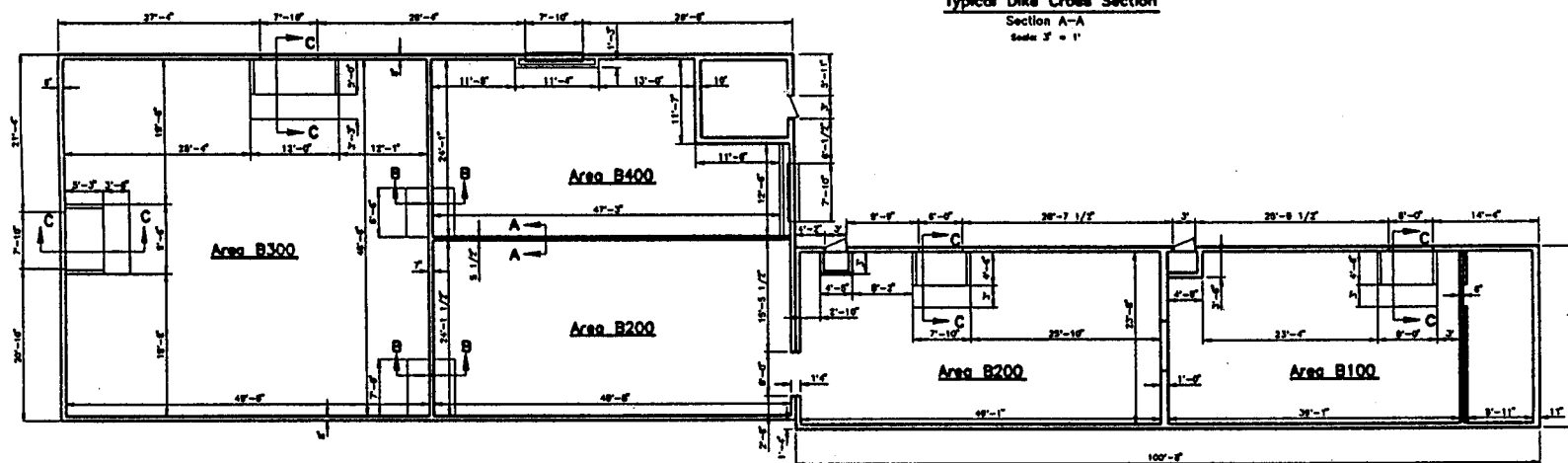
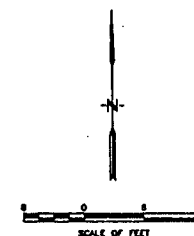
Figure D.7

Building B

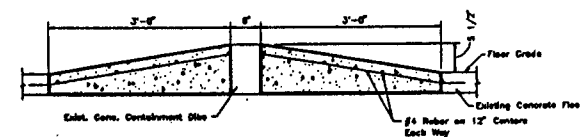
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Typical Dike Cross Section
Section A-A
Scale: 3" = 1'



Concrete Ramp Cross Section
Section C-C
Scale: 1" = 1'



Concrete Ramp Cross Section
Section B-B
Scale: 1" = 1'

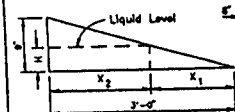
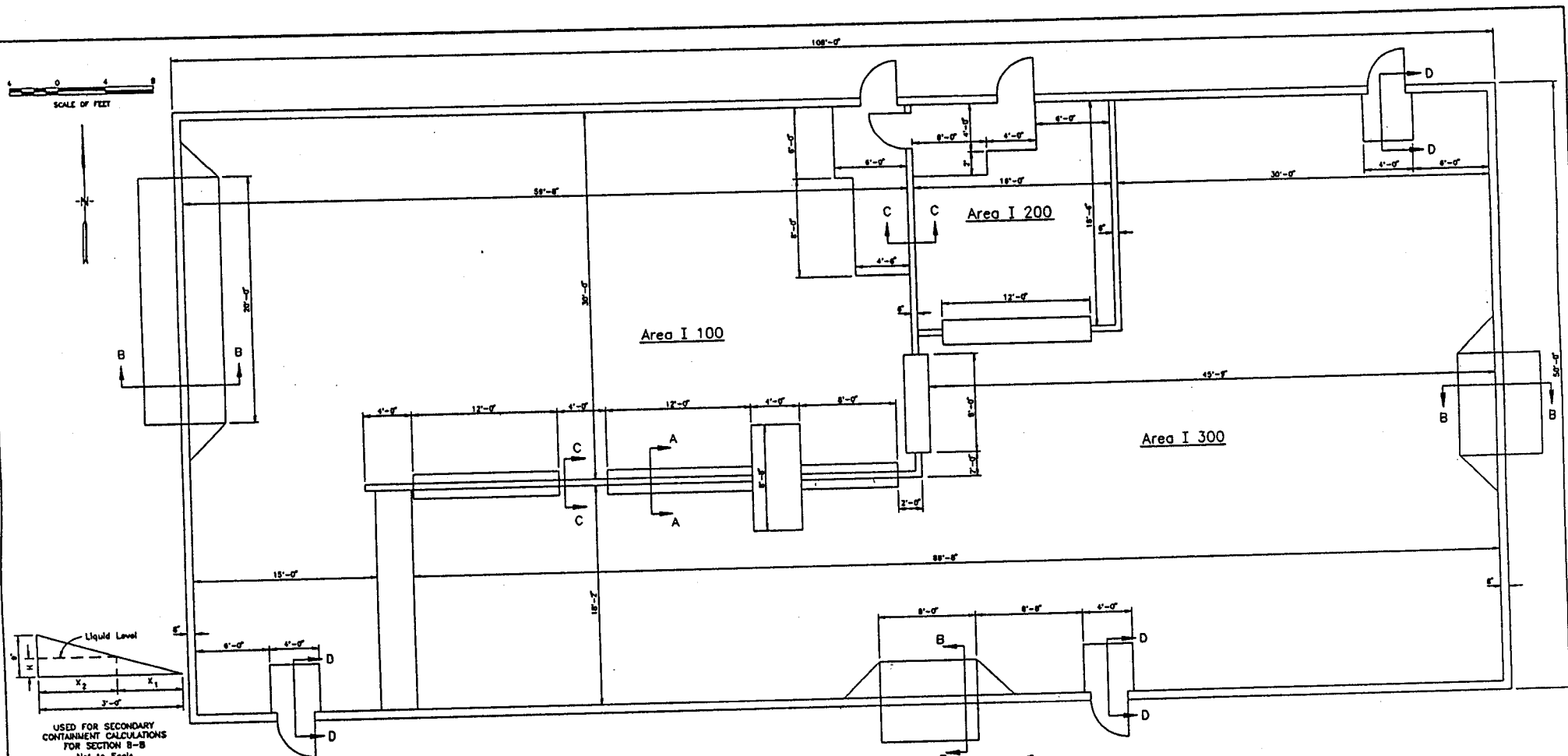
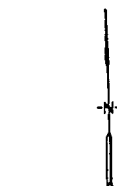
Clean Harbors Kansas, LLC
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Figure D.8

Building I

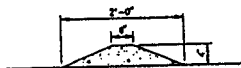
July 21, 1994
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SCALE OF FEET



USED FOR SECONDARY
CONTAINMENT CALCULATIONS
FOR SECTION B-B
Not to Scale

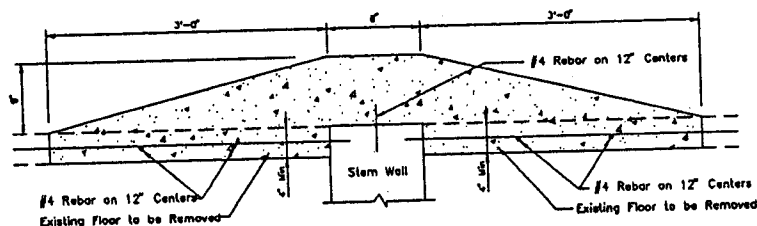
Area	H	X ₁	X ₂
I-100	5 1/2"	1'-2"	1'-10"
I-300	4"	1'-4"	1'-8"



#4 Rebar
on 24" Centers

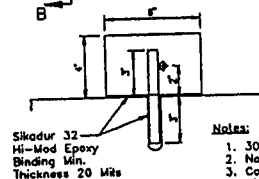
Typical Dike Cross Section

Section A-A
Scale: 1" = 1'-0"



Typical Ramp Cross Section

Section B-B
Scale: 1 1/2" = 1'-0"

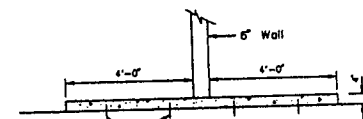


Sikadur 32
Hi-Mod Epoxy
Binding Min.
Thickness 20 Mils

- Notes:
- 3000 PSI concrete
 - No. 4 rebar on 24" centers
 - Concrete to be sandblasted where epoxy bonding goes

Typical Dike Cross Section

Section C-C
Scale: 3" = 1'



Concrete Entry
Pedestal Cross Section

Section D-D
Scale: 1/2" = 1'-0"

DIKING AND RAMPS - BLDG. I

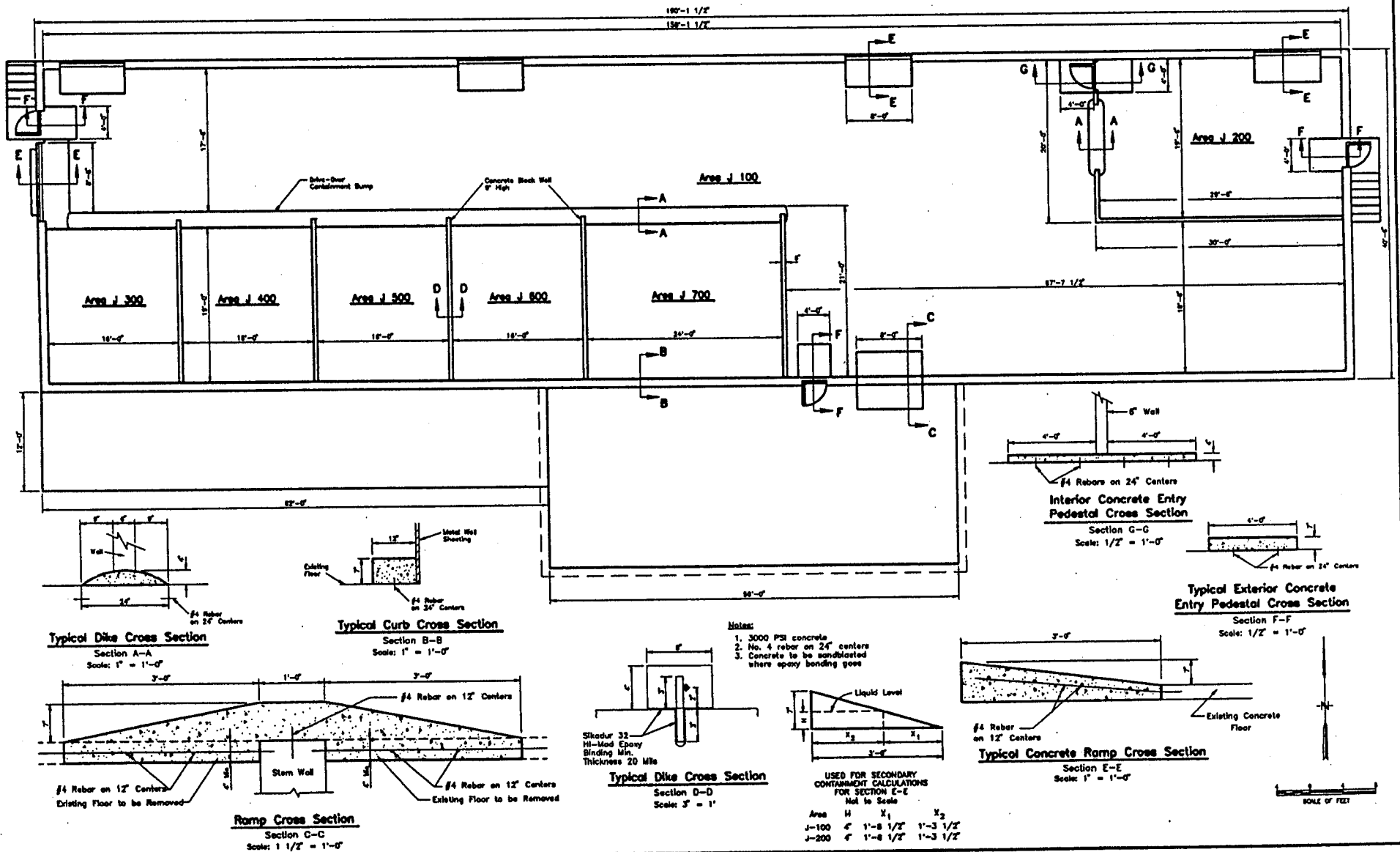
HYDROCARBON RECYCLERS INC. WICHITA, KANSAS

Clean Harbors Kansas, LLC
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Appendix D-A - Container Storage Buildings

Figure D.9

Building J

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**Clean Harbors Kansas, LLC
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Section D
Use and Management of Containers
Appendix D-B - Secondary Containment Calculations**

List of Attachments

Notes	Example Secondary Containment Calculations	
Attachment 1	Secondary Containment Calculations	Building D
Attachment 2	Secondary Containment Calculations	Processing Area
Attachment 3	Secondary Containment Calculations	Building C
Attachment 4	Secondary Containment Calculations	Drum Dock
Attachment 5	Secondary Containment Calculations	Building B
Attachment 6	Secondary Containment Calculations	Building I
Attachment 7	Secondary Containment Calculations	Building J

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**Clean Harbors Kansas, LLC
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Section D
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Appendix D-B - Secondary Containment Calculations**

Notes

Example Secondary Containment Calculations

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USPCI - HRI WICHITA
SECONDARY CONTAINMENT CALCULATIONS

EXAMPLE

¹Container Displacement Volume (CDV)

$$CDV = \# \text{ dr} \times 3.14 \times r^2 \times \text{curb height}$$

Total Containment Volume (TCV)

$$TCV = \text{Volume of Area} - CDV$$

Sample calculation for Area B100

Outer boundaries Area B100	Length x Width x Curb Height	
	39.08' x 23.67' x 0.45'	= 416.26 ft ³

Minus entrance berm North side	Length x Width x Curb Height	
	4.75' x 3.50' x 0.45'	= - 7.48 ft ³

Minus entrance ramp North side	(Length x Width + 1/2 x Base x Length) x Curb Height	
	(8' x 4.50' x 0.45') + (8' x 3 1/2' x 0.45')	= -21.60 ft ³

Total Area B100		= 387.18 ft ³
-----------------	--	--------------------------

CDV	60 dr x 3.14 x 1' ² x 0.45'	= -84.78 ft ³
-----	--	--------------------------

TCV	387.18 ft ³ - 84.78 ft ³	= 302.40 ft ³
-----	--	--------------------------

or	302.40 ft ³ x 7.48 gal/ft ³	= 2,261.95 gals
----	---	-----------------

¹Note: Container Displacement Volume (CDV) is the practical number of containers placed within the Area on the floor while maintaining appropriate aisle space. Dimension of two feet is used for a standard 55 gallon drum for calculation and is only used as an estimation.

Curb height is rounded down to nearest one hundredth of one foot to maintain a conservative calculation of containment capacity. All other calculations are rounded to the nearest one hundredth of the respective unit.

**Clean Harbors Kansas, LLC
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Section D
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Appendix D-B - Secondary Containment Calculations**

Attachment 1

Secondary Containment Calculations

Building D

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USPCI - HRI WICHITA

BUILDING D

Volume Provided

Calculated to excluded areas taken up by ramps
and internal berms.

Area D100 & D200

Note: D100 is a subpart of Area D200 and a 6" perimeter berm encloses both areas. Containment calculations for Area D200 utilized containment capacity of D100 for total volume calculations. A 0.10' separation ramp (berm) isolates Area D100 and provides the required containment for the tank storage capacity of the unit.

Area D100

See certified tank containment assessment for D100, Attachment 2 of Appendix E-A. Containers and a Tank are stored in Area D100.

Volume of Area D100 =

=
Total net area of D100 x perimeter berm height

$$2,148.36 \text{ ft}^2 \times 0.50' = 1,074.18 \text{ ft}^3$$

Area D200

outer boundaries

$$\frac{100' \times 21.50' \times 0.50'}{23' \times 29' \times 0.50'} = 1,408.50 \text{ ft}^3$$

Area D200

Entrance berm

$$6' \times 16' \times 0.50' = -48.00 \text{ ft}^3$$

West side

6' x 16' x 0.50'

Entrance ramp

$$\frac{3' \times 6.83' \times 0.50'}{4'/2 \times 0.50' \times 6.83'} = -17.08 \text{ ft}^3$$

West side

Total Areas D100 and D200 for container storage = 2,417.60 ft³

$$\text{CDV} \quad 76 \text{ dr.} + 316 \text{ dr.} \quad = - 615.44 \text{ ft}^3$$

TCV = 1,802.16 ft³

or =13,480.16 gals

or

Summary for Area D100 / D200

Total Volume Provided - Storage Capacity x 10% =
+ Gallons of Extra Capacity

TOTAL

$$13,480.16 \text{ gals} - (43,120 + 489) \text{ gals} \times 10\% = 9,119.26 \text{ gals}$$

Volume Provided

Area D300

Outer boundaries Area D300	45.50' x 25.33' x 0.50'	=	576.25 ft ³
Entrance ramp West side	3.33'/2 x 0.50' x 11.75'	=	- 9.78 ft ³
Entrance ramp South side	6'/2 x 0.50' x 9'	=	- 13.50 ft ³
Entrance berm East side	2' x 9.67' x 0.50'	=	- 9.67 ft ³
Hot room walls	3 x (7.33' x 1' x 0.50')	=	- 11.00 ft ³
Total Area D300		=	532.30 ft ³
CDV	32 dr.	=	- 50.24 ft ³
TCV		=	482.06 ft ³
or		=	3,605.81 gals

Summary Area D300

Capacity Required

Total Volume Provided - Storage Capacity x 10% =
± Gallons of Extra Capacity

TOTAL 3,605.81 gals - 3,520.00 gals X 10% = 3,253.81 gals

Area D400

See certified tank containment assessment for D400,
Attachment two of Appendix E-A. Tank Containment
only.

**Clean Harbors Kansas, LLC
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Section D
Use and Management of Containers
Appendix D-B - Secondary Containment Calculations**

Attachment 2

Secondary Containment Calculations

Processing Area

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Rainfall requirements

Area to Receive Rain (Worst Case)

Note: Area P100 and P200 are covered with a building. To estimate the worst case scenario of rain infiltration, we have calculated the rain of a 24 hour 25 year event coming in on the south and west sides at a 60 degree angle from horizontal. The open area on these two sides is 16.18' ($x = 16.18' / \tan 60^\circ = 9.34'$)

South Side	9.34' x 69.67'	=	650.72 ft ²
West Side	9.34' x 82.17'	=	<u>767.47 ft²</u>
		=	1,418.19 ft ²
Rainfall	6.15" x 1'/12"	=	<u>x 0.51 ft</u>
Total Gross Volume of rain infiltration		=	723.28 ft ³
		=	<u>x 7.48 gal/ft³</u>
Total Required for Rainfall		=	5,410.11 gal

Summary

Volume Provided

P100	=	22,031.44 gal
P200	=	<u>18,075.27 gal</u>
Total Gross Volume Provided	=	40,106.71 gal

Minus Storage Drums

Area P100: 88 drums single stacked on ramps.

$$\begin{array}{l} 0.5 \times 88 \text{ dr} \times 3.14 \times (1')^2 \\ \times 1' \times 7.48 \text{ gal/ft}^3 \end{array} = 1,033.44 \text{ gal}$$

Minus Storage Drums

Area P200: 92 drums double stacked, (46 on floor level).

$$\begin{array}{l} 46 \text{ dr} \times 3.14 \times (1')^2 \times \\ 1' \times 7.48 \text{ gal/ft}^3 \end{array} = 1,080.41 \text{ gal}$$

Rainfall Requirements	=	<u>5,410.13 gal</u>
Total Gross Volume	=	7,523.98 gal
Total Net Volume Provided		

$$40,106.71 \text{ gal} - 7,523.98 \text{ gal} = 32,582.73 \text{ gal}$$

Capacity Required

The largest tank volume or 10% of the total volume

Total Maximum Tank Volume Area P100	=	86,211.00 gal
Total Maximum Tank Volume Area P200	=	1,155.00 gal
Total Container Volume 180 Drums	=	<u>9,900.00 gal</u>

Total Required Capacity	=	97,266.00 gal
-------------------------	---	---------------

10% of Total Capacity	=	9,726.60 gal
-----------------------	---	--------------

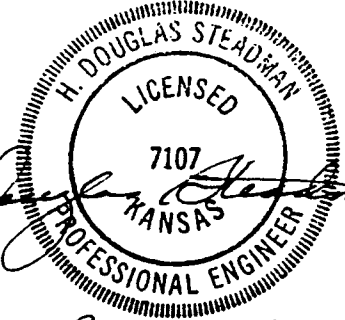
or		
Largest Tank Volume	V-5	= 20,895.00 gal (controls)

Total Capacity Required	=	20,895.00 gal
-------------------------	---	---------------

Total Capacity Provided	=	32,582.73 gal
-------------------------	---	---------------

Net Difference

32,582.73 gal - 20,895.00 gal	=	11,687.73 gal
-------------------------------	---	---------------


H. Douglas Steadman
Aug. 20, 1992

**Clean Harbors Kansas, LLC
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Appendix D-B - Secondary Containment Calculations**

Attachment 3

Secondary Containment Calculations

Building C

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HRIW
SECONDARY CONTAINMENT CALCULATIONS

PROCESS AREA

P100 and P200 are interconnected and are considered one secondary containment area.

Process Area P100

Volume Provided

Area P100	31.71' x 69.67' x 1'	=	2,209.24 ft ³
Truck Ramps	(1/2 x 29.83' x 15' x 1') x 2	=	447.45 ft ³
Sump Area	10' x 15.50' x 1'	=	<u>155.00 ft³</u>
Total Gross Volume		=	2,811.69 ft ³
			<u>x 7.48 gal/ft³</u>
Total Volume		=	21,031.44 gal

Process Area P200

Volume Provided

Area P200	33.96' x 69.67' x 1'	=	2,365.99 ft ³
West Ramp	(1/2 x 7.83' x 8.83' x 1') + (0.67' x 8.83' x 1')	=	40.49 ft ³
South Berm Opening	10' x 1' x 1'	=	<u>10.00 ft³</u>
Total Gross Volume		=	2,416.48 ft ³
		=	<u>x 7.48 gal/ft³</u>
Total Volume		=	18,075.27 gal

USPCI - HRI WICHITA
SECONDARY CONTAINMENT CALCULATION

BUILDING - C

Volume Provided - Calculated to exclude areas taken up by ramps and internal curbs.

Area C100	7' x 13.96' x 0.45'	=	43.97 ft ³
CDV	8 dr.	= -	11.30 ft ³
TCV		=	32.67 ft ³
or		=	244.37 gals
Area C200	6.08' x 13.50' x 0.45'	=	36.94 ft ³
CDV	8 dr.	= -	11.30 ft ³
TCV		=	25.64 ft ³
or		=	191.79 gals
Area C300	41.50' x 36.58' x 0.45'	=	683.13 ft ³
CDV	120 dr.	= -	169.56 ft ³
TCV		=	513.57 ft ³
or		=	3,841.50 gals
Area C400	34.50' x 36.58' - (9.83' x 2.42') x 0.45'	=	557.20 ft ³
CDV	92 dr.	= -	130.00 ft ³
TCV		=	427.20 ft ³
or		=	3,195.46 gals
Area C500	34.50' x 36.58' x 0.45'	=	567.90 ft ³
CDV	96 dr.	= -	135.65 ft ³
TCV		=	432.25 ft ³
or		=	3,233.23 gals

BUILDING - C

Area C600	$34.50' \times 36.58' \times 0.45'$	=	567.90 ft ³
CDV	96 dr.	=	- 135.65 ft ³
TCV		=	432.25 ft ³
or		=	3,233.23 gals

Area C700

Outer boundaries Area C700	$184.50' \times 36.58' \times 0.45'$	=	3,037.05 ft ³
Entrance berm North side	$9.67' \times 2.50' \times 0.45'$	=	- 10.88 ft ³
Berm within berm East side	$14.42' \times 5' \times 0.45'$	=	- 32.45 ft ³
Berm within berm West side	$14' \times 6.58' \times 0.45'$	=	- 41.45 ft ³
Entrance ramp East side	$8' \times 5'/2 \times 0.45'$	=	- 9.00 ft ³
Entrance ramp South side	$3' \times 12' \times 0.45'$ $12' \times 6'/2 \times 0.45'$	= - = -	16.20 ft ³ 16.20 ft ³
Total Area C700		=	2,910.87 ft ³
CDV	481 dr.	=	- 679.65 ft ³
TCV		=	2,231.22 ft ³
or		=	16,689.53 gals

C BUILDING SUMMARY

Total Volume Provided - Storage Capacity x 10 % =
± Gallons of Extra Capacity

Area C100	244.37 gals - 880 gals x 10%	=	156.37 gals
Area C200	191.79 gals - 880 gals x 10%	=	103.79 gals
Area C300	3,841.50 gals - 13,200 gals x 10%	=	2,521.50 gals
Area C400	3,195.46 gals - 10,120 gals x 10%	=	2,183.46 gals
Area C500	3,233.23 gals - 10,560 gals x 10%	=	2,177.23 gals
Area C600	3,233.23 gals - 10,560 gals x 10%	=	2,177.23 gals
Area C700	16,689.53 gals - 52,910 gals x 10%	=	11,398.68 gals

TOTAL

= 20,718.11 gals

**Clean Harbors Kansas, LLC
RCRA Permit Application
Section D
Use and Management of Containers
Appendix D-B - Secondary Containment Calculations**

Attachment 4

Secondary Containment Calculations

Drum Dock

**August 27, 1992
Revision No. 1**

USPCI - HRI WICHITA
SECONDARY CONTAINMENT CALCULATION

DRUM DOCK

Volume Provided - Calculated inside berm to exclude areas taken up ramps. The area slopes down from north to south at a slope of 1.60%. The vertical depth of containment on the north side is 1 inch and the vertical depth of containment on the south side is six inches. The formula used to calculate the volume of a trapezoid is used below.

Area L100

Outer boundaries
Area L100 $95.50' \times 26' \times (0.50' + .08')/2 = 720.07 \text{ ft}^3$

Entrance ramp North
side $10' \times 1' \times 0.08'/2 = + 0.40 \text{ ft}^3$

Entrance ramp South
side $16' \times 4' \times 0.50'/2 = - 16.00 \text{ ft}^3$

For a conservative estimate, we have assumed that the east and west ramps are vertical curbs.

Entrance ramp West
side $20.50' \times 2' \times (0.50' + 0.16)/2 = - 13.53 \text{ ft}^3$

Entrance ramp East
side $26 \times 3.50' \times (0.50' + 0.08')/2 = - 26.39 \text{ ft}^3$

Total Area L100 $= 664.55 \text{ ft}^3$

Rain infiltration - The Drum Dock has a roof and is open on three sides. To estimate the worst case scenario of rain infiltration, we have calculated the rain of a 24 hour 25 year event coming in on the south and west sides at a 60 degree angle from horizontal. The roof is 9 feet above the curb on both sides and overhangs 2.50 feet on the south side.

South Side $95.50' \times (5.20' - 2.50') \times 0.51' = - 131.50 \text{ ft}^3$

West Side $28' \times 5.20' \times 0.51' = - 74.26 \text{ ft}^3$

CDV $272 \text{ dr.} = - 213.52 \text{ ft}^3$

TCV $= 245.27 \text{ ft}^3$

or $= 1,834.62 \text{ gals}$

DRUM DOCK SUMMARY

Total Volume Provided - Storage Capacity x 10% =
± Gallons of Extra Capacity

TOTAL 1,834.62 gals - 14,960 gals x 10% = + 338.62 gals

**Clean Harbors Kansas, LLC
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Appendix D-B - Secondary Containment Calculations**

Attachment 5

Secondary Containment Calculations

Building B

**August 27, 1992
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USPCI - HRI WICHITA
SECONDARY CONTAINMENT CALCULATIONS

BUILDING B

Volume Provided - Calculated to exclude areas taken up by ramps and internal berms.

Area B100

Outer boundaries Area B100	39.08' x 23.67' x 0.45'	=	416.26 ft ³
Entrance berm North side	4.75' x 3.50' x 0.45'	= -	7.48 ft ³
Entrance ramp North side	8' x 4.50' x 0.45'	= -	16.20 ft ³
	8' x 3 1/2' x 0.45'	= -	5.40 ft ³
Total Area B100		=	387.18 ft ³
CDV	60 dr.	= -	84.78 ft ³
TCV		=	302.40 ft ³
or		=	2,261.95 gals

Area B200

Outer boundaries Area B200	49.08' x 23.67' x 0.45' + 48.67' x 24.13' x 0.45'	=	1,051.26 ft ³
Entrance berm North side	4.42' x 3' x 0.45'	= -	5.97 ft ³
Entrance ramp North side	7.83' x 4.5' x 0.45' + 7.83' x 3 1/2' x 0.45'	= -	21.14 ft ³
Entrance ramp West side	7.75' x 3 1/2' x 0.45'	= -	5.23 ft ³
Total Area B200		=	1,018.92 ft ³
CDV	192 dr.	= -	271.30 ft ³
TCV		=	747.62 ft ³
or		=	5,592.20 gals

BUILDING B

Area B300

Outer boundaries Area B300	$49.42' \times 48.67' \times 0.45'$	$= 1,082.37 \text{ ft}^3$
Entrance ramp North side	$12' \times 5' \times 0.45' + 12' \times 3.25'/2 \times 0.45'$	$= - 35.78 \text{ ft}^3$
Entrance ramp West side	$9.5' \times 5.25' \times 0.45' + 9.5' \times 3.50'/2 \times 0.45'$	$= - 29.93 \text{ ft}^3$
Entrance ramp Southeast side	$7.75' \times 3'/2 \times 0.45'$	$= - 5.23 \text{ ft}^3$
Entrance ramp Northeast side	$6.50' \times 3'/2 \times 0.45'$	$= - 4.39 \text{ ft}^3$
Total Area B300		$= 1,007.04 \text{ ft}^3$
CDV	180 dr.	$= - 254.34 \text{ ft}^3$
TCV		$= 752.70 \text{ ft}^3$
or		$= 5,630.20 \text{ gals}$

Area B400

Outer boundaries Area B400	$47.25' \times 24.08' \times 0.45' - 11.50' \times 11.58' \times 0.45'$	$= 452.07 \text{ ft}^3$
Entrance ramp West side	$6.50' \times 3'/2 \times 0.45'$	$= - 4.39 \text{ ft}^3$
Berm within berm North side	$11.33' \times 1.25' \times 0.45'$	$= - 6.37 \text{ ft}^3$
Total Area B400		$= 441.31 \text{ ft}^3$
CDV	68 dr.	$= - 96.08 \text{ ft}^3$
TCV		$= 345.23 \text{ ft}^3$
or		$= 2,582.32 \text{ gals}$

BUILDING B SUMMARY

Total Volume Provided - Storage Capacity x 10% =
± Gallons of Extra Capacity

Area B100	2,261.95 gals - 6,600 gals x 10%	= 1,601.95 gals
Area B200	5,592.20 gals - 21,120 gals x 10%	= 3,480.20 gals
Area B300	5,630.20 gals - 19,800 gals x 10%	= 3,650.20 gals
Area B400	2,582.32 gals - 7,480 gals x 10%	= 1,834.32 gals
TOTAL		=10,566.67 gals

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Section D
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Appendix D-B - Secondary Containment Calculations**

Attachment 6

Secondary Containment Calculations

Building I

**August 27, 1992
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USPCI - HRI WICHITA
SECONDARY CONTAINMENT CALCULATION

BUILDING - I

Volume Provided - Calculated to exclude ramps and curbs. For conservative volume calculations, we have assumed the wide internal curb, detail A-A shown on Drawing No. 50-17-10-001, is rectangle. External ramps and doorways are 9 inches high.

Area I100

Outer boundaries			
Area I100	$(59.67' \times 29.67' + 15' \times 19') \times 0.46'$	=	945.49 ft ³
Entrance ramp west side	$(20' \times 1.17' \times 0.46' / 2) + (20' \times 1.83' \times 0.46')$	= -	22.22 ft ³
Entrance ramp north side	$(8' \times 1.17' \times 0.46' / 2) + (8' \times 1.83' \times 0.46')$	= -	8.89 ft ³
Entrance door north side	$(4' \times 3.67' \times 0.46' / 2) + (4' \times 2.33' \times 0.46')$	= -	7.66 ft ³
Total Area I100		=	906.72 ft ³
*CDV	128 dr. (worst case 128 dr. with one tanker)	= -	184.88 ft ³

* Maximum Number of drums in area I100 double stacked is 416 drums.
Worst case would be 256 drums double stacked with one tanker.

TCV	=	721.84 ft ³
or	=	5,399.36 gals

Area I200

Outer boundaries			
Total Area I200	18.50' x 16' x 0.33'	=	97.68 ft ³
CDV	32 dr.	= -	33.16 ft ³
TCV		=	64.52 ft ³
or		=	482.61 gals

Area I300

Outer boundaries Area I300	20' x 30' x 0.33'	=	198.00 ft ³
Entrance ramp south side	3' x 8' x 0.33'/2	= -	3.96 ft ³
Entrance door south side	4' x 4' x 0.33'	= -	5.28 ft ³
Entrance door north side	(4' x 2.67' x 0.33'/2) + (4' x 3.33' x 0.33')	= -	6.16 ft ³
Total Area I300		=	182.60 ft ³
CDV	64 dr.	= -	66.32 ft ³
TCV		=	116.28 ft ³
or		=	869.77 gals

Area I400

Outer boundaries Area I400	(16' x 88.67' x 0.33') + (45' x 12.17' x 0.33')	=	644.87 ft ³
Entrance ramp north side	8' x 3' x 0.33'/2	= -	3.96 ft ³
Entrance ramps east and south sides	(8' x 1.33' x 0.33'/2 + 8' x 1.67' x 0.33') x 2	= -	12.32 ft ³
Entrance door north side	4' x 4' x 0.33'	= -	5.28 ft ³
Entrance door south side	(4' x 2.67' x 0.33'/2) + (4' x 3.33' x 0.33')	= -	6.16 ft ³
Total Area I400		=	617.15 ft ³
CDV	156 dr.	= -	161.65 ft ³
TCV		=	455.50 ft ³
or		=	3,407.14 gals

I BUILDING SUMMARY

Total Volume Provided - Largest Tank or Storage Capacity x 10% =
± Gallons of Extra Capacity

Area I100	5,399.36 gals. - 5,000 gals. (tanker)	= + 399.36 gals
Area I200	482.61 gals. - 3,520 gals. x 10%	= + 130.61 gals
Area I300	869.77 gals. - 7,040 gals. x 10%	= + 165.77 gals
Area I400	3,407.14 gals. - 17,160 gals. x 10%	= +1,691.14 gals
Total		= 2,386.88 gals

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Appendix D-B - Secondary Containment Calculations**

Attachment 7

Secondary Containment Calculations

Building J

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USPCI - HRI WICHITA
SECONDARY CONTAINMENT CALCULATION

BUILDING - J

Volume Provided - Calculated to exclude ramps and curbs. For conservative volume calculations, we have assumed the wide internal curb, detail A-A shown on Drawing No. 50-18-10-001, is a rectangle 4 inches high and 24 inches wide. All internal ramps and berms are 4 inches high, external ramps and doorways are 7 inches high.

Area J100

Outer boundaries		
Area J100	$(158.13' \times 17.50' + 67.63' \times 21' - 20' \times 30') \times 0.33'$	= 1,183.88 ft ³
Ramps on north and south sides	$(8' \times 1.71' \times 0.33' / 2 + 8' \times 1.29' \times 0.33') \times 4$	= - 22.65 ft ³
Entrance ramp west side	$(8.50' \times 1.71' \times 0.33' / 2) + (8.50' \times 1.29' \times 0.33')$	= - 6.02 ft ³
Three entrance doors	$(4' \times 4' \times 0.33') \times 3$	= - 15.84 ft ³
Total Area J100		= 1,139.40 ft ³
CDV	224 dr.	= - 232.11 ft ³ .
TCV		= 907.29 ft ³
or		= 6,786.53 gals

Area J200

Outer boundaries		
Area J200	$19.50' \times 29.50' \times 0.33'$	= 189.83 ft ³
Entrance ramp north side	$(8' \times 1.71' \times 0.33' / 2) + (8' \times 1.29' \times 0.33')$	= - 5.66 ft ³
Entrance doors	$(4' \times 4' \times 0.33') \times 2$	= - 10.56 ft ³
Total Area J200		= 173.61 ft ³
CDV	48 dr.	= - 49.74 ft ³
TCV		= 123.87 ft ³
or		= 926.55 gals

Area J300

Outer boundaries

Total Area J300 19' x 16' x 0.33' = 100.32 ft³

CDV 32 dr. = - 33.16 ft³

TCV = 67.16 ft³

or = 502.36 gals

Area J400

Outer boundaries

Total Area J400 19' x 16' x 0.33' = 100.32 ft³

CDV 32 dr. = - 33.16 ft³

TCV = 67.16 ft³

or = 502.36 gals

Area J500

Outer boundaries

Total Area J500 19' x 16' x 0.33' = 100.32 ft³

CDV 32 dr. = - 33.16 ft³

TCV = 67.16 ft³

or = 502.36 gals

Area J600

Outer boundaries

Total Area J600 19' x 16' x 0.33' = 100.32 ft³

CDV 32 dr. = - 33.16 ft³

TCV = 67.16 ft³

or = 502.36 gals

Area J700

Outer boundaries

Total Area J700 19' x 24' x 0.33' = 150.48 ft³

CDV 48 dr. = - 49.74 ft³

TCV = 100.74 ft³

or = 753.54 gals

J BUILDING SUMMARY

Total Volume Provided - Storage Capacity x 10% =
± Gallons of Extra Capacity

Area J100	6,786.53 gals.	- 24,640 gals. x 10% = +4,322.53 gals
Area J200	926.55 gals.	- 5,280 gals. x 10% = + 398.55 gals
Area J300	502.36 gals.	- 3,520 gals. x 10% = + 150.36 gals
Area J400	502.36 gals.	- 3,520 gals. x 10% = + 150.36 gals
Area J500	502.36 gals.	- 3,520 gals. x 10% = + 150.36 gals
Area J600	502.36 gals.	- 3,520 gals. x 10% = + 150.36 gals
Area J700	753.54 gals.	- 5,280 gals. x 10% = + 225.54 gals
Total		= 5,548.06 gals

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E-1 Introduction:

The purpose of this section is to provide information regarding the design, installation, and operation of the various tank systems at the Clean Harbors Kansas, LLC facility. This information is provided to fulfill the requirements of Kansas Administrative Regulations (KAR), Title 28, Article 31 as well as federal regulations as set forth in 40 CFR Part 264 Subpart J, and 40 CFR 270.16. The KAR incorporate, with few additions, the RCRA regulations contained in 40 CFR 260 through 270. Therefore, this section will refer only to the federal regulations.

A variety of tank systems are used at the Clean Harbors Kansas, LLC facility. Tanks are used to store and/or treat liquids, solids, and sludges. There are twenty-two (22) waste storage tanks with a total permitted capacity of 137,987 gallons at the facility. Individual tank capacities, dimensions, and tank system locations are summarized on Table E.1, Hazardous Waste Storage Tanks. Each of these tank systems is addressed in detail in the following pages.

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Table E.1 Hazardous Waste Storage Tanks				
VESSEL	CAPACITY - WORK (gal)	CAPACITY - MAX (gal)	DIMENSIONS*	LOCATION
V-1	7,181	7,363	8'0"x 26'7"V	Process Area
V-2	7,084	7,084	8'0"x 18'10"V	Process Area
V-3	7,181	7,363	8'0"x 26'7"V	Process Area
V-4	7,181	7,363	8'0"x 26'7"V	Process Area
V-5	20,895	20,895	12'0"x 25'7"V	Process Area
V-6	20,895	20,895	12'0"x 25'7"V	Process Area
V-7	7,181	7,363	8'0"x 26'7"V	Process Area
V-8	7,181	7,363	8'0"x 26'7"V	Process Area
V-9	5,078	5,078	6'0"x 24'0"H	Building D
V-10	5,078	5,078	6'0"x 24'0"H	Building D
V-11	5,078	5,078	6'0"x 24'0"H	Building D
V-12	5,078	5,078	6'0"x 24'0"H	Building D
V-13	5,078	5,078	6'0"x 24'0"H	Building D
V-14	5,078	5,078	6'0"x 24'0"H	Building D
V-15A	2,659	2,659	6'3"x 11'7"H	Building D
V-15B	2,659	2,659	6'3"x 11'7"H	Building D
V-15C	2,659	2,659	6'3"x 11'7"H	Building D
V-15D	2,659	2,659	6'3"x 11'7"H	Building D
V-16	9,028	9,028	8'0"x 24'0"H	Building D
V-17	522	522	3'4"x 8'0"H	Process Area
V-26	1,129	1,155	6'0"x 5'7"V	Process Area
TOTAL	136,562	137,498	N/A	N/A

*Dimensions are given in feet and inches. The first dimension is the tank diameter and the second dimension is the length, followed by a 'V' for vertical tanks or an 'H' for horizontal tanks.

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E-2 Description of Tank Systems: 40 CFR 270.16(a), (b), and (e),
264.192 (a)

The purpose of the following discussion is to describe the design and operation of the various tank systems at Clean Harbors Kansas, LLC. Certified tank assessments by an independent, qualified, registered, professional engineer as required by 40 CFR 264.192(a) are presented in Appendix E-A, Tank System Assessments and Certifications. Appendix E-A includes tank certification statements, tank containment certification statements, compatibilities of wastes with tank materials, tank system field notes, and examples of containment coatings. Individual tank drawings are provided in Appendix E-B, Tank Drawings.

Figure E.1, Hazardous Waste Management Areas (Drawing 50-01-10-001, Hazardous Waste Management Areas in Section Y), indicates the general location of the tank management areas in relation to the other portions of the facility. Figure E.2, Tank Locations (Drawing 50-55-10-002, Tank Locations in Section Y), shows the location of the individual tanks within the tank management areas. Piping and instrumentation diagrams, and process flow diagrams are presented in Section N, Air Emissions.

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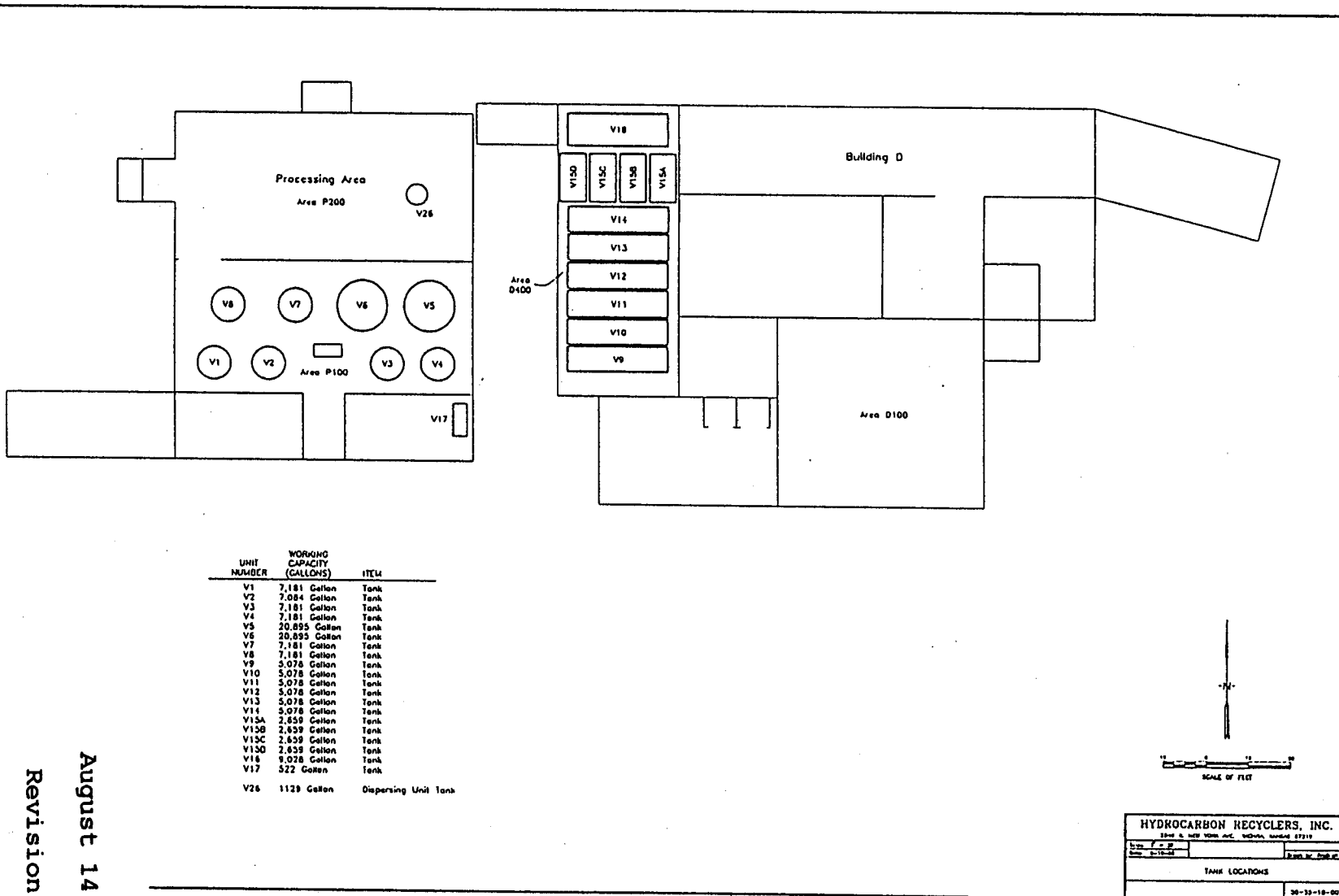


Figure E.2. Tank Locations

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RCRA hazardous waste, as well as a variety of non-hazardous wastes, may be managed in the different tank systems. A list of RCRA waste codes acceptable for storage or treatment in the tank systems are provided in Section A, Part A Permit Application. Any waste code listed in the Part A may be handled in any tank at the facility. In general, tanks V-1 through V-8, V-17, and V-26 are located within the Processing Area and have a total working capacity of 86,430 gallons. Materials stored or treated in these vessels are ignitable and non-ignitable, hazardous and nonhazardous liquids and sludges. Tanks V-9 through V-16, including V-15A through V-15D, are located within Building D and have a total working capacity of 50,132 gallons. Materials stored or treated in these vessels are non-ignitable, hazardous and nonhazardous liquids and sludges.

The secondary containment systems for Clean Harbors Kansas, LLC's tank systems are designed such that no external shell of any tank, nor any external metal component of a tank will be in contact with soil

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or standing water (i.e., sloped containment, elevated systems, etc.). As a result of design criteria and operational procedures, the requirements of 40 CFR 264.192 (a)(3) (corrosion expert assessment) are not applicable. As required by 40 CFR 264.193 (c)(4), any accumulated precipitation in a secondary containment system will be removed within twenty-four (24) hours of detection, or in as timely a manner as possible.

E-3 Operational Practices: 40 CFR 270.16(c), (i), (j), 264.194, 264.198, 264.199, 264.195

The following information is supplied to meet the specific requirements of RCRA regarding tank operating practices.

E-3a General Operating Requirements: 40 CFR 270.16(i), 264.194

Any material that could cause the tank, ancillary equipment, or secondary containment systems to fail (i.e., rupture, leak, etc.) will not come into contact with the tank systems. Assessments for compatibilities of wastes with tank system materials are presented in Appendix E-A of this section.

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Clean Harbors Kansas, LLC will use the appropriate controls and practices to prevent spills and overflows from tanks and containment systems. Spill prevention controls may include check valves, dry disconnect couplings, vacuum or gas purge, permanently fixed or mobile catch pans, and secondary containment around the activity. Overfill prevention controls include level sensing devices, high level alarms, an automatic pump activated by a float sensor, overfill bypass to another tank, and/or visual inspections during transfer. The control systems for the various tank systems are shown in the Piping and Instrument Diagram (P&ID)s provided in Section N, Air Emissions. Tank systems in hazardous waste service have, at a minimum, the following overflow protection systems:

- . Secondary containment with chemical resistant coating,
- . Automatic high level alarms on each individual tank, and
- . Manual gauging ports.

Automatic level gauges are provided on some tanks and may be used in addition to the protection systems listed above. Adequate freeboard will be maintained in open top tanks to prevent liquids from blowing out of the top of the tank.

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E-3b Description of Feed Systems, Safety Cutoff, Bypass Systems, and Pressure Controls: 40 CFR 270.16(c)

Descriptions of the feed systems, safety cutoffs, bypass systems, and pressure controls are provided below for the tank systems, additional information (including P&ID drawings) can be found in Section N, Air Emissions.

E-3b(1) Feed Systems, Safety Cutoff, and Bypass Systems:

Automatic and manual level detection systems on all tanks are monitored each operating day material transfer to or from tanks takes place. Valves and pipe manifold stations are used to control flow to and from tank systems. Some tank system piping also incorporates check valves for added flow control safety. Tank systems can be isolated (by valves) from waste flow. Refer to Section N, Air Emissions for detailed P&ID drawings showing piping and valves.

E-3b(2) Pressure Controls:

The tank systems at Clean Harbors Kansas, LLC have pressure and vacuum relief valves, or are vented to the atmosphere directly. Tanks V-1, V-3, V-4, V-7, and V-8 are low pressure tanks installed with pressure and vacuum relief valves set at approximately 14.5 pounds per square

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inch gauge (psig) pressure and approximately 0.5 ounce per square inch vacuum. In the event of a relief, these tanks are vented directly to the atmosphere. Tanks V-2, V-5, V-6, V-9 through V-14, V-15a through 15-d, V-16, and V-17 are closed top atmospheric tanks equipped with thief hatches with pressure relief set at approximately 2 ounces per square inch and vacuum relief set at 0.4 ounce per square inch. In the unlikely event of a relief, these tanks vent directly to the atmosphere. Tank V-26 is vented through a demister to the atmosphere, and tank V-18 is vented directly to the atmosphere.

As the newly proposed second phase of the air emission standards for hazardous waste facilities becomes final, Clean Harbors Kansas, LLC will address and implement appropriate air emission control devices for the affected tank systems.

E-3c Special Requirements for Handling Incompatible, Ignitable, or Reactive Waste: 40 CFR 270.16(j), 264.198, 264.199, 264.17(b)

Proper precautions are and will be taken (when managing ignitable or reactive wastes, or mixing incompatible wastes or incompatible wastes and other materials) to prevent reactions which: 1) generate extreme heat or pressure, fire or explosion, or violent

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reactions; or 2) produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment. Wastes exhibiting the characteristics of reactivity will not be placed in any of the tank systems located at the LESW facility unless the waste is treated, otherwise managed, or mixed before or immediately after placement into a tank system so that:

- . the resulting waste, mixture, or dissolved material no longer meets the definition of reactivity; or
- . the waste is stored or treated such that it is protected from any material or conditions that may cause the waste to ignite or react; or
- . the tank system is used solely for emergencies.

Tanks designated to accommodate storage of wastes exhibiting the characteristics of ignitability and reactivity will comply with the requirements for the maintenance of protective distances between the waste management area and any adjoining property lines as outlined in the National Fire Protection Association

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(NFPA) "Flammable and Combustible Liquids Code" (1977 or 1981). Water and/or foam fire suppression systems are also located where required by NFPA regulations. Smoking or open flames will not be permitted in the vicinity of these tank systems. "No Smoking" signs are conspicuously placed wherever there is a hazard from ignitable or reactive waste.

Incompatible wastes or incompatible waste and material will not be placed in the same tank system for storage. A compatibility analysis will determine whether a waste meets the compatibility criteria for storage in a tank system. The procedures for this analysis are outlined in Appendix C-A, Waste Analysis Plan (WAP) located in Section C, Waste Characteristics, and will be performed when necessary to ensure that incompatible wastes or incompatible waste and material are only placed in the same tank system under controlled circumstances. There may be instances where an incompatible waste is used as a reagent to treat another waste in a tank, under controlled circumstances. Additionally, hazardous waste will not be placed in a tank system that previously held an incompatible waste or material unless compliance with 40 CFR 264.17(b) is demonstrated. Certifications for Compatibilities of Wastes with Tank Materials are located in Appendix E-A.

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E-3d Inspections: 40 CFR 264.195

A list of inspections performed for the various tank systems is provided in Section F, Inspection Plan. Clean Harbors Kansas, LLC will document the results of these inspections in the operating record to be kept at the facility for a minimum of three years.

E-3e Contingency Measures: 40 CFR 264.196

A tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, will immediately be removed from service and Clean Harbors Kansas, LLC will comply with the applicable requirements listed in 40 CFR 264.196. The Contingency/Emergency Plan (Section H), contains procedures for responding to a situation where there is a leaking or an unfit-for-use tank system.

E-3f Tank Cleaning for Non-Hazardous Waste Service

Tanks that have been in hazardous waste service are cleaned prior to non-hazardous waste service. This cleaning procedure will consist of the following steps:

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- . remove wastes from tank systems by draining and/or pumping;
- . flush hoses and piping by pumping an appropriate detergent or solvent in a volume roughly equivalent to the total volume of the pipe or hose; and
- . remove residuals by pumping, scraping, brushing, and/or washing, as necessary.

When visual inspection of the tank shows no evidence of contamination, the tank system is considered to be available for non-hazardous waste or product service. The above procedures, while not intended to close a tank, will make it available for non-hazardous waste management.

In some circumstances, Clean Harbors Kansas, LLC may opt to store non-hazardous wastes in a tank that previously held hazardous wastes, without first cleaning that tank. Under these circumstances, Clean Harbors Kansas, LLC will manage the non-hazardous wastes as if they are hazardous, in accordance with the mixture rule (40 CFR 261.3(b)).

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E-4 Containment and Detection of Releases: 40 CFR 264.193,
270.16(g)

Secondary containment systems for tank systems are designed, installed, and operated to prevent migration of wastes or accumulated liquid to the soil or groundwater. The containment systems enable the detection of, and collection of, releases and accumulated liquids. Liquids accumulated in a CMU will be removed from containment systems within 24 hours or as soon as practicable.

Secondary containment systems for tank systems consist of concrete slabs surrounded with concrete walls or dikes of appropriate height. The containment systems are sloped or tanks are constructed above the floor to facilitate detection of any released material or other liquid. Accumulated liquids will be removed and managed appropriately. Each area has been designed to surround the base of the tanks and cover the surrounding earth most likely to come into contact with a release of waste. These design and operating factors are, in combination, capable of preventing potential lateral and vertical migration of hazardous waste constituents. The secondary containment systems have been designed to have sufficient structural strength and thickness to minimize the potential of failure owing to pressure gradients, physical contact with waste, climatic conditions, and the stress

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of daily operations. Additionally, the foundations will provide resistance to pressure gradients above and below the system, and will minimize the potential for failure due to settlement, compression, or uplift.

Prior to placing a tank in hazardous waste service, the associated secondary containment system (slab, walls, dikes) will be coated with a sealant to protect the containment surface against chemical attack. The secondary containment systems consist of a liner (sealed concrete) that is free of cracks or gaps. Types of containment coatings previously used at Clean Harbors Kansas, LLC include Siloxirane, Sentry Polymers Semstone 245 or other Clean Harbors Kansas, LLC approved coatings which are effective against chemical attack and/or mechanical abuse. Appendix E-A contains secondary containment certifications for tank systems that are in service and coating specifications of the aforementioned coatings.

Tank system containment areas are inspected each operating day for the presence of liquids. Inspections will enable facility personnel to determine if failure of a tank or containment structure has occurred. Tank systems are either designed and constructed up and off the containment floor, provided with leak detection systems, or the containment area is sloped for ease of

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visually detecting leaks or spills. The design of tank system containment areas, in conjunction with facility inspections, facilitates the detection of accumulated liquids. Accumulated liquids collected in the secondary containment system will be removed within 24 hours or soon as practical, and managed according to the procedures described in the WAP as outlined in Section C, Waste Characteristics.

Ancillary equipment (e.g., pumps) associated with the various tank systems are located within the tank systems' secondary containment areas, within secondary containment areas for pumps, or within the containment area of an associated loading/unloading area. Therefore, sufficient secondary containment is provided for the ancillary equipment. All piping utilized for transfer of hazardous waste to and from the various units is above-ground and is inspected each operating day for leaks or damage.

Tank system secondary containment areas have been designed to provide sufficient capacity to contain 100 percent of the capacity of the largest tank within their boundaries or 10 percent of the total capacity of tanks and containers, whichever is greater. Also, each containment area has been designed (e.g., with berms, building walls, storm sewer, etc.) and is operated in a manner to prevent run-on. Tank systems are provided with

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roofing to minimize infiltration of precipitation. Adequate containment is provided to manage the volume of incidental blown precipitation. Tank system secondary containment capacity calculations and certifications are provided in Appendix E-A. Containment capacities for areas containing tanks or tanks and containers, are summarized in Table E.2, Tank System Containment Details. As shown in the table, the containment capacity provided by each containment area is greater than the capacity required.

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Table E.2 Tank System Containment Details					
LOCATION	NUMBER OF TANKS & CONTAINERS & GALLONS EACH	CAPACITY REQUIRED (gallons) *	CAPACITY AVAILABLE (gallons) *	SECONDARY CONTAINMENT DESCRIPTION	GENERAL UTILIZATION
Building D D400	6 @ 5,078 4 @ 2,659 1 @ 9,028	9,028	9,195	Coated concrete curbs/slab inside a building	Storage of non- ignitable hazardous and nonhazardous liquids
Processing Area P100/P200	5 @ 7,181 1 @ 7,084 2 @ 20,895 1 @ 522 1 @ 1,129 180 @ 55	20,895	32,583	Coated concrete walls/slab under a roof	Storage of non- ignitable and ignitable hazardous and nonhazardous liquids

* Capacity calculations are provided in Appendix E-A

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E-5 Installation of Tank Systems: 40 CFR 270.16(f),
264.192 (b) - (g)

Prior to placing any tank system in service, an independent registered professional engineer or qualified inspector will inspect for the presence of:

- . Weld breaks,
- . Punctures,
- . Scrapes of protective coatings,
- . Cracks,
- . Corrosion, or
- . Any other structural damage or inadequate construction/installation.

All such discrepancies will be remedied, and tank assessments in compliance with 40 CFR 264.192 will be performed, certified, and documented, prior to use. Appendix E-A provides Certified Tank Assessments, including secondary containment design and capacity calculations, compatibility assessments, and field notes.

Appendix E-B provides drawings and construction specifications for the individual tanks.

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Minor repairs (e.g., piping or valve replacement) will be performed at the facility and tightness tested before the tanks are returned to service. Tank systems will be removed from service when major repairs are required. The method of repair will depend upon the nature and extent of the defect. Major repairs may require that the tank be removed for repair and/or sent to the manufacturer for modifications. Tank systems requiring major repairs will be recertified by an independent professional engineer prior to being placed back into service.

E-6 Closure: 40 CFR 264.197

Final facility closure (i.e., closure of all waste tanks on site) or partial closure of a selected tank system will be performed as outlined in Section J, Closure Plan.

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Appendix E-A - Tank System Assessments and Certifications

Appendix E-A

Tank System Assessments and Certifications

Attachment 1, Tank Certification Statements

Attachment 2, Tank Containment Certification Statements

Attachment 3, Compatibilities of Wastes with Tank Materials

Attachment 4, Tank System Field Notes

Attachment 5, Examples of Containment Coatings

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Appendix E-A - Tank System Assessments and Certifications

Attachment 1, Tank Certification Statements

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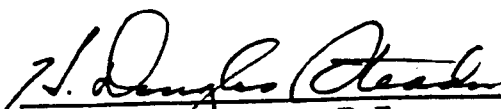
I, H. Douglas Steadman, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

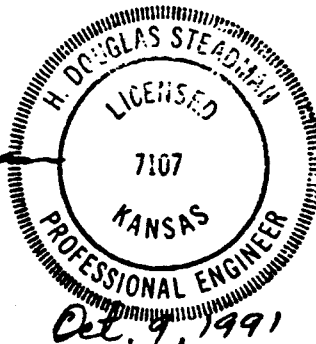
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-1 have been adequately designed and the tank system V-1 has sufficient structural strength, is compatible with waste water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-1 was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That the tank system V-1 and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on July 25, 1991 and it was found that such tank system tested positive for tightness; and
- 4) That all ancillary equipment associated with the tank system V-1 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were API 620, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-1, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 7,181 gallons of the waste type listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

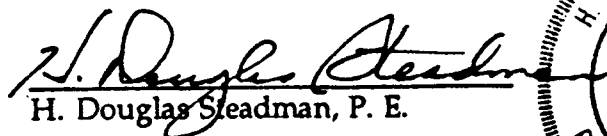
I, H. Douglas Steadman, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

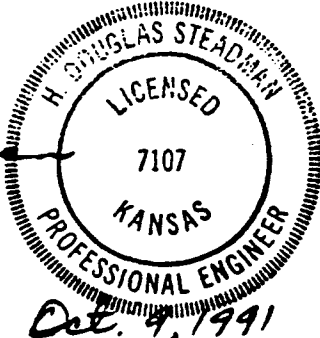
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-2 have been adequately designed and the tank system V-2 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-2 was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That the tank system V-2 and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on July 25, 1991 and it was found that such tank system tested positive for tightness; and
- 4) That all ancillary equipment associated with the tank system V-2 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were API 620, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-2, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 7,084 gallons of the waste types listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

I, H. Douglas Steadman, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

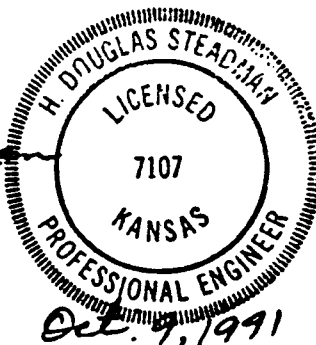
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-3 have been adequately designed and the tank system V-3 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-3 was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That the tank system V-3 and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on July 25, 1991 and it was found that such tank system tested positive for tightness; and
- 4) That all ancillary equipment associated with the tank system V-3 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were API 620, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-3, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 7,181 gallons of the waste type listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

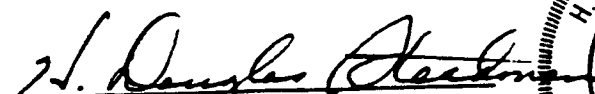
I, H. Douglas Steadman, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

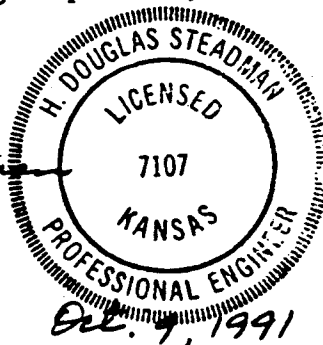
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-4 have been adequately designed and the tank system V-4 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-4 was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That the tank system V-4 and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on July 25, 1991 and it was found that such tank system tested positive for tightness; and
- 4) That all ancillary equipment associated with the tank system V-4 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were API 620, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-4, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 7,181 gallons of the waste type listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

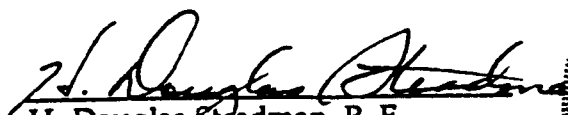
I, H. Douglas Steadman, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

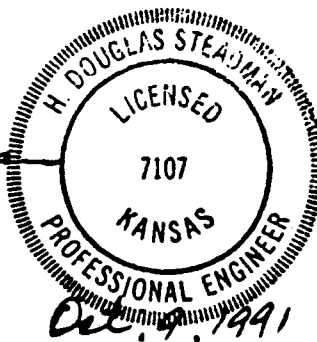
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-5 have been adequately designed and the tank system V-5 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-5 was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That the tank system V-5 and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on July 25, 1991 and it was found that such tank system tested positive for tightness; and
- 4) That all ancillary equipment associated with the tank system V-5 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were API 620, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-5, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 20,895 gallons of the waste type listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

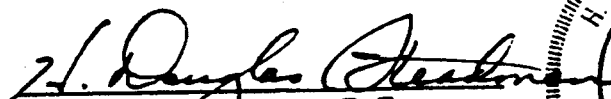
I, H. Douglas Steadman, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

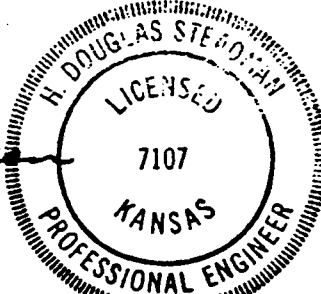
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-6 have been adequately designed and the tank system V-6 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-6 was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That the tank system V-6 and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on July 25, 1991 and it was found that such tank system tested positive for tightness; and
- 4) That all ancillary equipment associated with the tank system V-6 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were API 620, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-6, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 20,895 gallons of the waste type listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



Oct. 9, 1991

October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

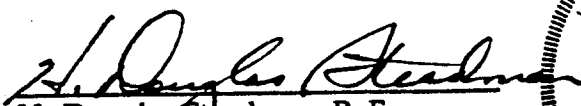
I, H. Douglas Steadman, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

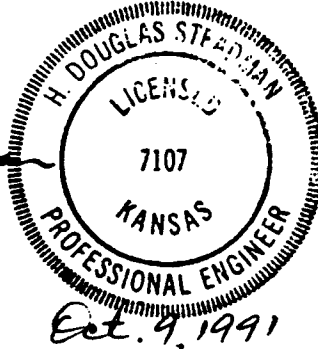
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-7 have been adequately designed and the tank system V-7 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-7 was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That the tank system V-7 and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on July 25, 1991 and it was found that such tank system tested positive for tightness; and
- 4) That all ancillary equipment associated with the tank system V-7 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were API 620, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-7, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 7,181 gallons of the waste type listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

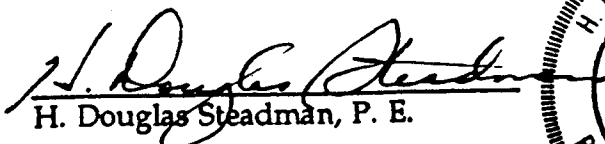
I, H. Douglas Steadman, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

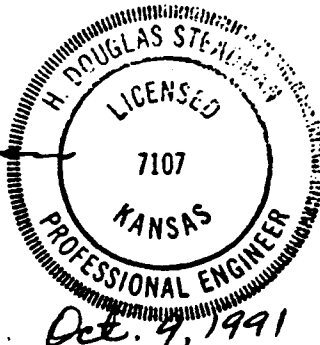
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-8 have been adequately designed and the tank system V-8 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-8 was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That the tank system V-8 and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on July 25, 1991 and it was found that such tank system tested positive for tightness; and
- 4) That all ancillary equipment associated with the tank system V-8 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were API 620, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-8, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 7,181 gallons of the waste type listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM


I, H. Douglas Steadman, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

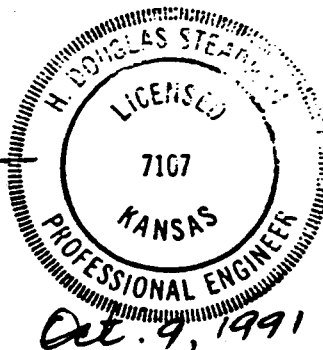
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-9 have been adequately designed and the tank system V-9 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-9 was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That the tank system V-9 and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on July 25, 1991 and it was found that such tank system tested positive for tightness; and
- 4) That all ancillary equipment associated with the tank system V-9 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were UL 245, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-9, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 5,078 gallons of the waste type listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

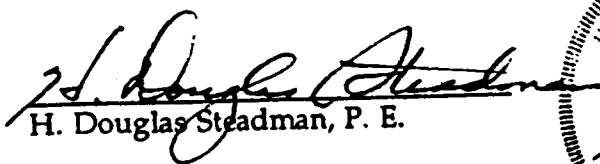
I, H. Douglas Steadman, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

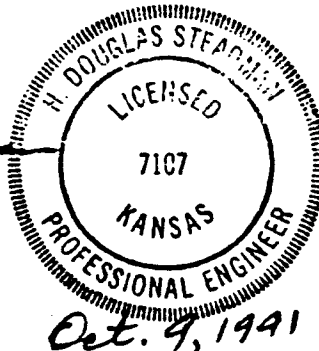
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-10 have been adequately designed and the tank system V-10 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-10 was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That the tank system V-10 and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on July 25, 1991 and it was found that such tank system tested positive for tightness; and
- 4) That all ancillary equipment associated with the tank system V-10 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were UL 245, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-10, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 5,078 gallons of the waste type listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

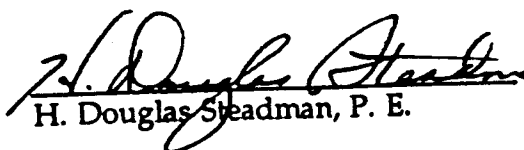
I, H. Douglas Steadman, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

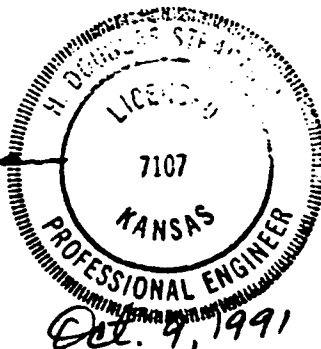
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-11 have been adequately designed and the tank system V-11 has sufficient structural strength, is compatible with waste perchloroethylene and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-11 was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That the tank system V-11 and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on July 25, 1991 and it was found that such tank system tested positive for tightness; and
- 4) That all ancillary equipment associated with the tank system V-11 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were UL 245, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-11, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 5,078 gallons of the waste type listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

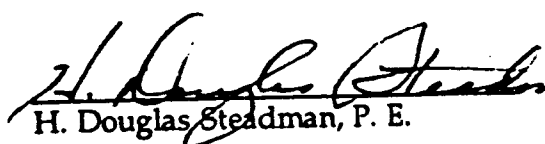
I, H. Douglas Steadman, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

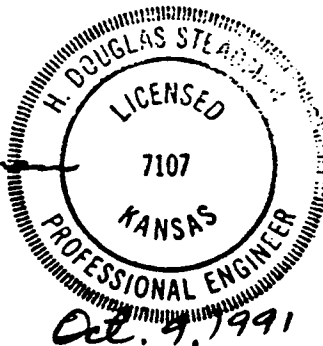
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-12 have been adequately designed and the tank system V-12 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-12 was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That the tank system V-12 and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on July 25, 1991 and it was found that such tank system tested positive for tightness; and
- 4) That all ancillary equipment associated with the tank system V-12 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were UL 245, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-12, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 5,078 gallons of the waste type listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

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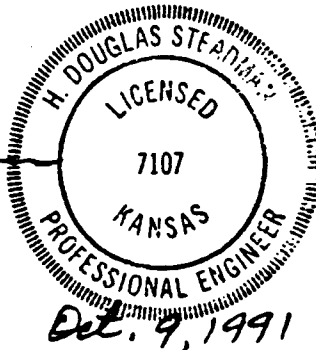
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-13 have been adequately designed and the tank system V-13 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-13 was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That the tank system V-13 and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on July 25, 1991 and it was found that such tank system tested positive for tightness; and
- 4) That all ancillary equipment associated with the tank system V-13 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were UL 245, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-13, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 5,078 gallons of the waste type listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

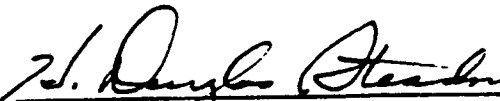
I, H. Douglas Steadman, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

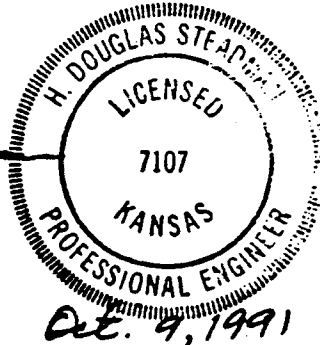
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-14 have been adequately designed and the tank system V-14 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-14 was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That the tank system V-14 and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on July 25, 1991 and it was found that such tank system tested positive for tightness; and
- 4) That all ancillary equipment associated with the tank system V-14 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were UL 245, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-14, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 5,078 gallons of the waste type listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

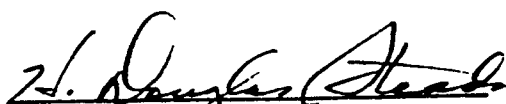
I, H. Douglas Steadman, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

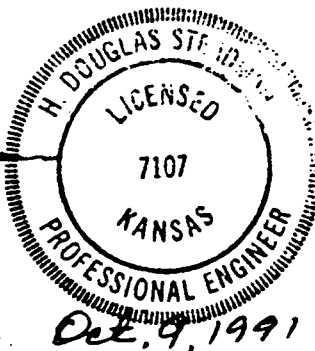
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-15A have been adequately designed and the tank system V-15A has sufficient structural strength, is compatible with waste water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-15A was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That the tank system V-15A and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on July 25, 1991 and it was found that such tank system tested positive for tightness; and
- 4) That all ancillary equipment associated with the tank system V-15A is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were UL 425, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-15A, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 2,659 gallons of the waste types listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

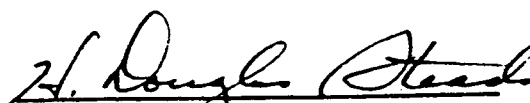
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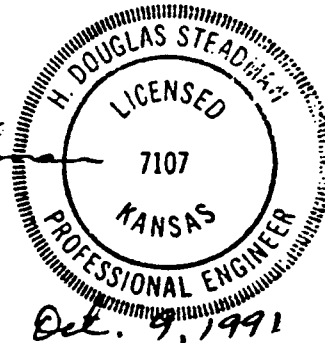
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-15B have been adequately designed and the tank system V-15B has sufficient structural strength, is compatible with waste water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-15B was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That the tank system V-15B and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on July 25, 1991 and it was found that such tank system tested positive for tightness; and
- 4) That all ancillary equipment associated with the tank system V-15B is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were UL 425, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-15B, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 2,659 gallons of the waste types listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

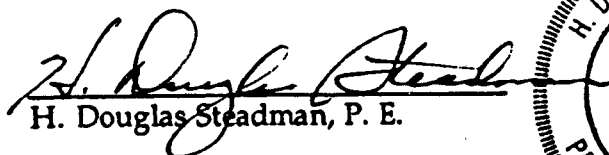
I, H. Douglas Steadman, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

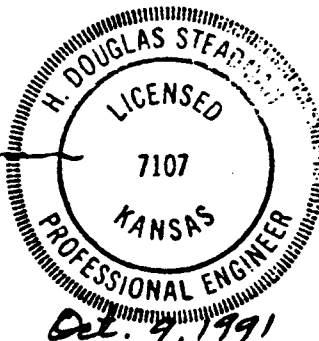
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-15C have been adequately designed and the tank system V-15C has sufficient structural strength, is compatible with waste water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-15C was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That the tank system V-15C and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on July 25, 1991 and it was found that such tank system tested positive for tightness; and
- 4) That all ancillary equipment associated with the tank system V-15C is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were UL 425, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-15C, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 2,659 gallons of the waste types listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

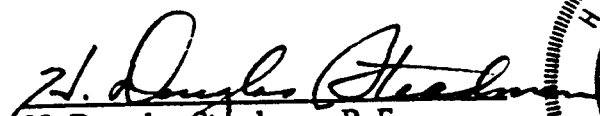
I, H. Douglas Steadman, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

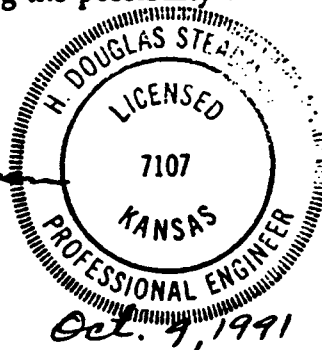
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-15D have been adequately designed and the tank system V-15D has sufficient structural strength, is compatible with waste water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-15D was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That the tank system V-15D and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on July 25, 1991 and it was found that such tank system tested positive for tightness; and
- 4) That all ancillary equipment associated with the tank system V-15D is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were UL 245, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-15D, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 2,659 gallons of the waste types listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

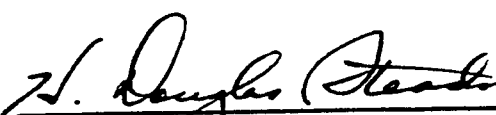
I, H. Douglas Steadman, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

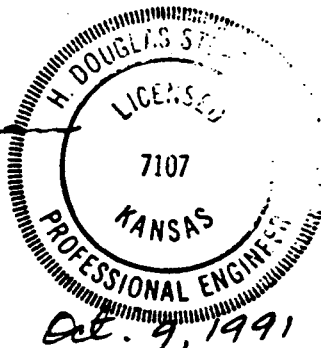
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-16 have been adequately designed and the tank system V-16 has sufficient structural strength, is compatible with waste water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-16 was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That the tank system V-16 and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on July 25, 1991 and it was found that such tank system tested positive for tightness; and
- 4) That all ancillary equipment associated with the tank system V-16 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were UL 425, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-16, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 9,028 gallons of the waste types listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

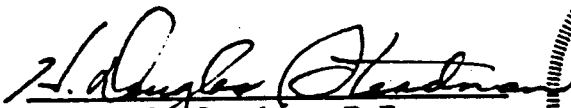
I, H. Douglas Steadman, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

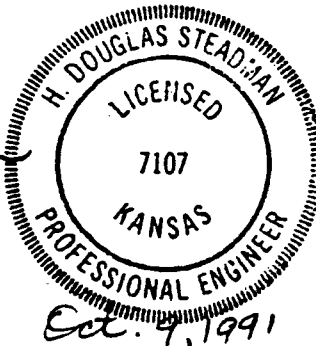
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-17 have been adequately designed and the tank system V-17 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-17 was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That all ancillary equipment associated with the tank system V-17 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were AP 620, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-17, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 522 gallons of the waste type listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

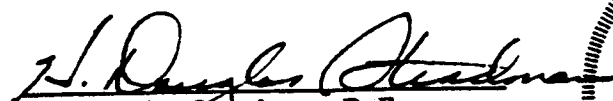
I, H. Douglas Steadman, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

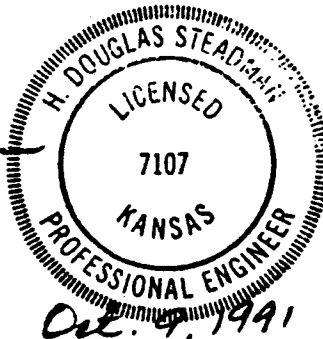
- 1) The foundation, structural support, seams, connections and pressure controls for the tank system V-18 have been adequately designed and the tank system V-18 has sufficient structural strength, is compatible with waste water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 2) That the tank system V-18 was inspected on July 25, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 3) That the tank system V-18 and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on July 25, 1991 and it was found that such tank system tested positive for tightness; and
- 4) That all ancillary equipment associated with the tank system V-18 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

The design standards used to ensure that this tank system was properly designed and constructed were API 620, ACI 323-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank system and components, that tank system V-18, including its foundation, secondary containment, and all associated ancillary equipment, has been adequately designed, has been properly installed, has sufficient structural integrity and is acceptable for the storage of 489 gallons of the waste types listed in 1) above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



October 9, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

I, H. Douglas Steadman, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

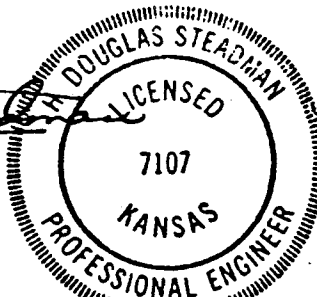
The foundation, structural support, seams, connections and pressure controls for the tank system V-26 have been adequately designed and the tank system V-26 has sufficient structural strength, is compatible with waste solvent and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system.

The design standards used to ensure that this tank system was properly designed and constructed were API 620, ACI 318-89, UBC 1991.

In conclusion, I certify that, in my opinion as a registered professional engineer trained and experienced in the proper structural design and installation of tank systems and components, that tank system V-26, to include its foundation and secondary containment, has been adequately designed, has sufficient structural integrity and is acceptable for the storage of 1,129 gallons of the waste solvent and water.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



Nov. 25, 1991

November 25, 1991

CERTIFICATION FOR NEW ABOVE GROUND TANK SYSTEM

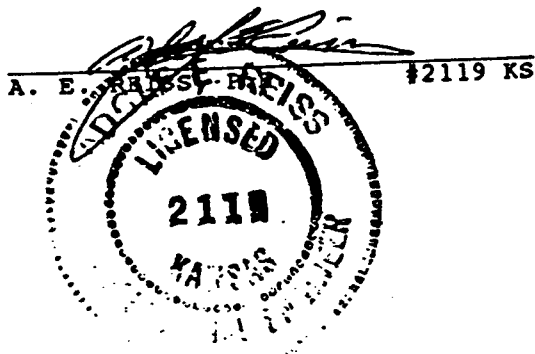
I. A. E. Reiss, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim, or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

- 1) That the tank system V26 was inspected on October 24, 1991 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 2) That the tank system V26 and associated ancillary equipment was tightness tested while under the working pressure of 30 PSI on October 24, 1991 and it was found that such tank system tested positive for tightness; and
- 3) That all ancillary equipment associated with the tank system V26 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

I certify that, in my opinion as a registered professional engineer trained and experienced in the proper installation of the above tank system and components, that tank system and ancillary equipment has been properly installed, has sufficient structural integrity and is acceptable for the storage of 1,129 gallons of the waste.

I certify under penalty of law that this document and all attachments were prepared under my direction in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

December 6, 1991



Clean Harbors Kansas, LLC

RCRA Permit Application

Section E

Tank Systems

Appendix E-A - Tank System Assessments and Certifications

Attachment 2, Tank Containment Certification Statements

Throughout this Attachment, the facility referred
to as "Clean Harbors Kansas, LLC" is the same facility
identified in the permit application as "Clean Harbors Kansas, LLC."

July 25, 1997
Revision No. 8

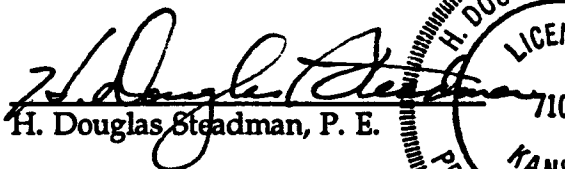
CERTIFICATION OF SECONDARY CONTAINMENT

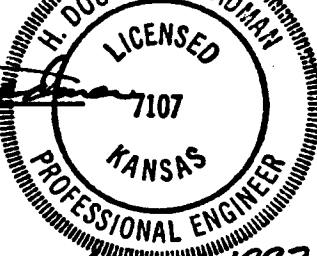
I, H. Douglas Steadman, P.E., a registered professional engineer in the State of Kansas, acting as an independent consultant for USPCI, inspected the facility on September 19, 1991, reviewed documents dated June 30, 1992 regarding modifications made by the facility, reviewed documents dated August 20, 1992 regarding containment calculation revisions, and hereby certify that the secondary containment system for the process area known as Areas P100 and P200 (for tanks V1 - V8, V-17, and V-26) at the HRS Wichita facility has sufficient structural integrity, has been properly designed and installed, and is acceptable for storing hazardous waste solvents and water. In particular, I certify that the secondary containment system:

- 1. foundation, structural support, and floor joints have been adequately designed**
- 2. has sufficient structural strength to ensure it will not collapse, rupture, or fail**
- 3. is compatible with the wastes being stored or treated in tanks V1 - V8, V-17, and V-26.**
- 4. has sufficient corrosion protection to ensure it will not collapse, rupture, or fail**
- 5. has been inspected for the presence of punctures, scrapes of protective coatings, cracks or gaps, corrosion, leaks and other structural damage or inadequate construction or installation; and that all discrepancies were identified and remedied**
- 6. has been designed and installed to prevent any migration of wastes or accumulated liquid out of the system to the soil, ground water, or surface water**
- 7. is capable of visual detection and collecting releases and accumulated liquids until the collected material is removed**
- 8. is coated with materials that are impervious to the wastes to be placed in the tank system and have sufficient strength and thickness to prevent failure owing to pressure gradients (including static head and external hydrologic forces), physical contact with the waste to which it is exposed, climatic conditions, and the stress of daily operation (including supporting the weight of full tanks)**
- 9. is placed on a foundation capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system, and capable of preventing failure due to settlement, compression, or uplift**
- 10. is provided with a visual leak detection layout that is designed and is currently operated so that it will amplify the failure of either the primary or secondary containment structure or the presence of any release of hazardous waste of accumulated liquid within 24 hours**
- 11. is designed and operated to drain and remove liquids resulting from spills, leaks, or precipitation within 24 hours.**
- 12. is designed and operated to contain 100 percent of the capacity of the largest tank or 10% of the drum storage capacity within its boundary**

13. has sufficient excess capacity to contain precipitation from a 25-year, 24-hour rainfall event
14. is free of gaps or cracks in the secondary containment surface
15. is designed and installed to surround the tank completely and to cover all surrounding surfaces likely to come into contact with the waste if the waste is released from the tanks.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



Aug. 21, 1992

August 21, 1992

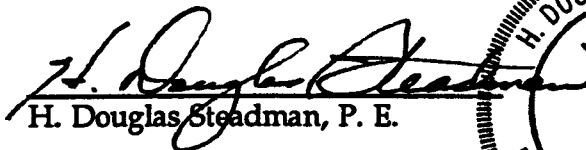
CERTIFICATION OF SECONDARY CONTAINMENT

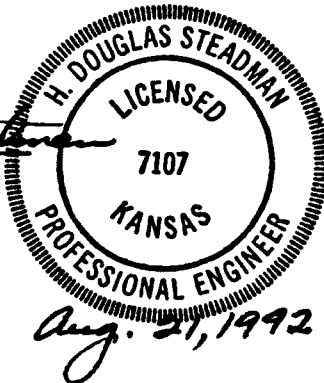
I, H. Douglas Steadman, P.E., a registered professional engineer in the State of Kansas, acting as an independent consultant for USPCI, inspected the facility on September 19, 1991, reviewed documents dated August 20, 1992 regarding containment calculation revisions, and hereby certify that Area D100 of Building D's secondary containment system for tank V18 at the HRS Wichita facility has sufficient structural integrity, has been properly designed and installed, and is acceptable for storing hazardous waste solvents and water. In particular, I certify that the secondary containment system:

1. foundation, structural support, and floor joints have been adequately designed
2. has sufficient structural strength to ensure it will not collapse, rupture, or fail
3. is compatible with the wastes being stored or treated in tank V18
4. has sufficient corrosion protection to ensure it will not collapse, rupture, or fail
5. has been inspected for the presence of punctures, scrapes of protective coatings, cracks or gaps, corrosion, leaks and other structural damage or inadequate construction or installation; and that all discrepancies were identified and remedied
6. has been designed and installed to prevent any migration of wastes or accumulated liquid out of the system to the soil, ground water, or surface water
7. is capable of visual detection and collecting releases and accumulated liquids until the collected material is removed
8. is coated with materials that are impervious to the wastes to be placed in the tank system and have sufficient strength and thickness to prevent failure owing to pressure gradients (including static head and external hydrologic forces), physical contact with the waste to which it is exposed, climatic conditions, and the stress of daily operation (including supporting the weight of full tanks)
9. is placed on a foundation capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system, and capable of preventing failure due to settlement, compression, or uplift
10. is provided with a visual leak detection layout that is designed and is currently operated so that it will amplify the failure of either the primary or secondary containment structure or the presence of any release of hazardous waste of accumulated liquid within 24 hours
11. is designed and operated to drain and remove liquids resulting from spills and leaks within 24 hours.

12. is designed and operated to contain 100 percent of the capacity of the largest tank or 10% of the drum storage capacity within its boundary
13. does not need to have sufficient excess capacity to contain precipitation from a 25-year, 24-hour rainfall event because it is enclosed
14. is free of gaps or cracks in the secondary containment surface
15. is designed and installed to surround the tank completely and to cover all surrounding surfaces likely to come into contact with the waste if the waste is released from the tanks.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



August 21, 1992

CERTIFICATION OF SECONDARY CONTAINMENT

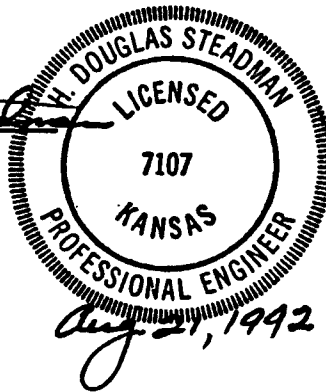
I, H. Douglas Steadman, P.E., a registered professional engineer in the State of Kansas, acting as an independent consultant for USPCI, inspected the facility on September 19, 1991, reviewed documents dated August 20, 1992 regarding containment calculation revisions, and hereby certify that the Area D400 of Building D's secondary containment system for tanks V9 - V14, V15A - V15D, and V16, at the HRS Wichita facility has sufficient structural integrity, has been properly designed and installed, and is acceptable for storing hazardous waste solvents and water. In particular, I certify that the secondary containment system:

1. foundation, structural support, and floor joints have been adequately designed
2. has sufficient structural strength to ensure it will not collapse, rupture, or fail
3. is compatible with the wastes being stored or treated in tanks V9 - V14, V15A - V15D, and V16
4. has sufficient corrosion protection to ensure it will not collapse, rupture, or fail
5. has been inspected for the presence of punctures, scrapes of protective coatings, cracks or gaps, corrosion, leaks and other structural damage or inadequate construction or installation; and that all discrepancies were identified and remedied
6. has been designed and installed to prevent any migration of wastes or accumulated liquid out of the system to the soil, ground water, or surface water
7. is capable of visual detection and collecting releases and accumulated liquids until the collected material is removed
8. is coated with materials that are impervious to the wastes to be placed in the tank system and have sufficient strength and thickness to prevent failure owing to pressure gradients (including static head and external hydrologic forces), physical contact with the waste to which it is exposed, climatic conditions, and the stress of daily operation (including supporting the weight of full tanks)
9. is placed on a foundation capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system, and capable of preventing failure due to settlement, compression, or uplift
10. is provided with a visual leak detection layout that is designed and is currently operated so that it will amplify the failure of either the primary or secondary containment structure or the presence of any release of hazardous waste of accumulated liquid within 24 hours
11. is designed and operated to drain and remove liquids resulting from spill and leaks within 24 hours.

12. is designed and operated to contain 100 percent of the capacity of the largest tank within its boundary
13. does not need to have sufficient excess capacity to contain precipitation from a 25-year, 24-hour rainfall event because it is enclosed
14. is free of gaps or cracks in the secondary containment surface
15. is designed and installed to surround the tank completely and to cover all surrounding surfaces likely to come into contact with the waste if the waste is released from the tanks.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


H. Douglas Steadman, P. E.



August 21, 1992

**USPCI - HRI WICHITA
SECONDARY CONTAINMENT CALCULATIONS**

BUILDING D AREA D100

Volume provided:

Area D100	49' x 45.17'	=	2,213.33 ft ²
South Ramp	11.75' x 4' + 11.75' x 3' / 2	= -	64.63 ft ²
South Door	4' x 5'	= -	20.00 ft ²
West Doors	3.33' x 4' + 2' x 3.17'	=	<u>19.66 ft²</u>
Total Net Area		=	2,148.36 ft ²

Total Volume Provided:

North curb is 1.25 inches high;
(2,148.36 ft² x 0.10') x
7.48 gal/ft³ = 1,606.97 gal

Drum Displacement: 152 drums double stacked, (76 on floor level).

76 x 3.14 (1')² x 0.10' x 7.48 = - 178.50 gal

Total Net Volume Provided: = 1,428.47 gal

Capacity Required

Largest Container is Tank V-18 at 489 gallons,
Total volume stored in Area D100 is 8,849 gallons @ 10% is 884.90
gallons, therefore; 884.90 gallons is the capacity required.

Summary

The volume provided is greater than the capacity required. No rain infiltration applies since the area is enclosed.


Aug. 20, 1992

USPCI - HRI WICHITA
SECONDARY CONTAINMENT CALCULATIONS

BUILDING D AREA D400

Volume provided:

Area D400	70.67' x 29'	=	2,049.43 ft ²
South Door	4.33' x 3.50'	= -	15.16 ft ²
East Area	5.50' x 15.5'	=	<u>85.25 ft²</u>
Total Net Area		=	2,119.52 ft ²

Total Volume Provided:

Curb height is 7 inches.

(2,119.52 ft ² x 0.58') x	
7.48 gal/ft ³	= 9,195.33 gal

Capacity Required

Tank V - 16 = 9,028 gallons

Summary

The volume provided is greater than the capacity required. No rain infiltration applies since the area is enclosed.


H. Douglas Steadman
Aug. 20, 1992

HRIW
SECONDARY CONTAINMENT CALCULATIONS

PROCESS AREA

P100 and P200 are interconnected and are considered one secondary containment area.

Process Area P100

Volume Provided

Area P100	31.71' x 69.67' x 1'	=	2,209.24 ft ³
Truck Ramps	(1/2 x 29.83' x 15' x 1') x 2	=	447.45 ft ³
Sump Area	10' x 15.50' x 1'	=	<u>155.00 ft³</u>
Total Gross Volume		=	2,811.69 ft ³
			<u>x 7.48 gal/ft³</u>
Total Volume		=	21,031.44 gal

Process Area P200

Volume Provided

Area P200	33.96' x 69.67' x 1'	=	2,365.99 ft ³
West Ramp	(1/2 x 7.83' x 8.83' x 1') + (0.67' x 8.83' x 1')	=	40.49 ft ³
South Berm Opening	10' x 1' x 1'	=	<u>10.00 ft³</u>
Total Gross Volume		=	2,416.48 ft ³
		=	<u>x 7.48 gal/ft³</u>
Total Volume		=	18,075.27 gal

Rainfall requirements

Area to Receive Rain (Worst Case)

Note: Area P100 and P200 are covered with a building. To estimate the worst case scenario of rain infiltration, we have calculated the rain of a 24 hour 25 year event coming in on the south and west sides at a 60 degree angle from horizontal. The open area on these two sides is 16.18' ($x = 16.18' / \tan 60^\circ = 9.34'$)

South Side	9.34' x 69.67'	=	650.72 ft ²
West Side	9.34' x 82.17'	=	<u>767.47 ft²</u>
		=	1,418.19 ft ²
Rainfall	6.15" x 1'/12"	=	<u>x 0.51 ft</u>
Total Gross Volume of rain infiltration		=	723.28 ft ³
		=	<u>x 7.48 gal/ft³</u>
Total Required for Rainfall		=	5,410.11 gal

Summary

Volume Provided

P100	=	22,031.44 gal
P200	=	<u>18,075.27 gal</u>
Total Gross Volume Provided	=	40,106.71 gal

Minus Storage Drums

Area P100: 88 drums single stacked on ramps.

$$\begin{aligned} &0.5 \times 88 \text{ dr} \times 3.14 \times (1')^2 \\ &\times 1' \times 7.48 \text{ gal/ft}^3 = 1,033.44 \text{ gal} \end{aligned}$$

Minus Storage Drums

Area P200: 92 drums double stacked, (46 on floor level).

$$\begin{aligned} &46 \text{ dr} \times 3.14 \times (1')^2 \times \\ &1' \times 7.48 \text{ gal/ft}^3 = 1,080.41 \text{ gal} \end{aligned}$$

Rainfall Requirements	=	<u>5,410.13 gal</u>
Total Gross Volume	=	7,523.98 gal
Total Net Volume Provided		
40,106.71 gal - 7,523.98 gal	=	32,582.73 gal

Capacity Required

The largest tank volume or 10% of the total volume

Total Maximum Tank Volume Area P100	=	86,211.00 gal
Total Maximum Tank Volume Area P200	=	1,155.00 gal
Total Container Volume 180 Drums	=	<u>9,900.00 gal</u>

Total Required Capacity	=	97,266.00 gal
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10% of Total Capacity	=	9,726.60 gal
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or		
Largest Tank Volume	V-5	= 20,895.00 gal (controls)

Total Capacity Required	=	20,895.00 gal
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Total Capacity Provided	=	32,582.73 gal
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Net Difference

32,582.73 gal - 20,895.00 gal	=	11,687.73 gal
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REISS & GOODNESS ENGINEERS
2160 WEST 21ST STREET - WICHITA, KANSAS 67203 2181 (316) 832-0213

CERTIFICATION - ABOVE GROUND TANK SYSTEM

I, A.E. Reiss, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

- 1) The pedestal of tank system V-2 was modified in June of 1992 by cutting two grooves in the pedestal 1/2" deep by 3/4" wide for the purpose of leak detection;
- 2) The foundation, structural support, seams, connections and pressure controls for the tank system V-2 have been adequately designed and the tank system V-2 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 3) That the tank system V-2 was inspected on June 30, 1992 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 4) That the associated ancillary equipment for tank V-2 was tightness tested while under the working pressure of 30 PSI on May 22, 1992 and it was found that such tank system tested positive for tightness; and
- 5) That all ancillary equipment associated with the tank system V-2 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

I certify that, in my opinion as a registered professional engineer trained and experienced in the proper installation of the above tank system and components, that tank system and ancillary equipment has been properly installed, has sufficient structural integrity and is acceptable for the storage of 7,084 gallons of waste solvents and water.

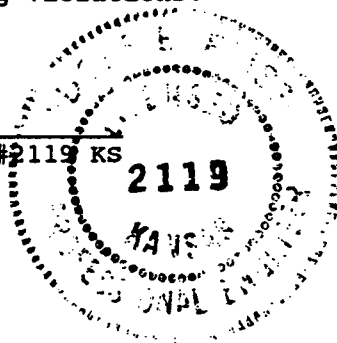
I certify under penalty of law that this document and all attachments were prepared under my direction in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


A. E. REISS, P.E.

#2119 KS

2119

July 29, 1992





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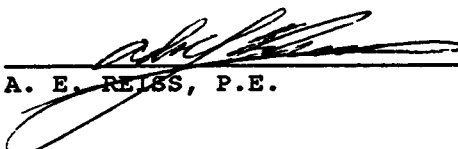
CERTIFICATION - ABOVE GROUND TANK SYSTEM

I, A.E. Reiss, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

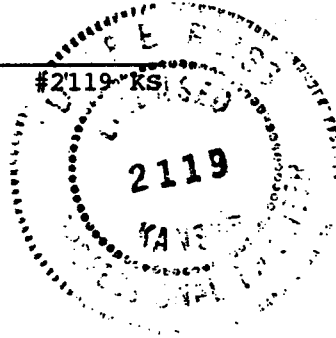
- 1) The ancillary system of V-3 was modified in June of 1992 for the installation of a pump;
- 2) The foundation, structural support, seams, connections and pressure controls for the tank system V-3 have been adequately designed and the tank system V-3 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 3) That the tank system V-3 was inspected on May 22, 1992 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 4) That the tank system V-3 was tightness tested while under a working pressure of 15 psi on June 30, 1992 and it was found that such tank system tested positive for tightness;
- 5) That the associated ancillary equipment for tank V-3 was tightness tested while under the working pressure of 30 PSI on June 30, 1992 and it was found that such tank system tested positive for tightness; and
- 6) That all ancillary equipment associated with the tank system V-3 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

I certify that, in my opinion as a registered professional engineer trained and experienced in the proper installation of the above tank system and components, that tank system and ancillary equipment has been properly installed, has sufficient structural integrity and is acceptable for the storage of 7,181 gallons of waste solvents and water.

I certify under penalty of law that this document and all attachments were prepared under my direction in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


A. E. REISS, P.E.

July 29, 1992





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CERTIFICATION - ABOVE GROUND TANK SYSTEM

I, A.E. Reiss, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

- 1) The ancillary system of tank V-5 was modified in June of 1992;
- 2) The foundation, structural support, seams, connections and pressure controls for the tank system V-5 have been adequately designed and the tank system V-5 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 3) That the tank system V-5 was inspected on July 1, 1992 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 4) That the associated ancillary equipment for tank V-5 was tightness tested while under the working pressure of 30 PSI on July 1, 1992 and it was found that such tank system tested positive for tightness; and
- 5) That all ancillary equipment associated with the tank system V-5 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

I certify that, in my opinion as a registered professional engineer trained and experienced in the proper installation of the above tank system and components, that tank system and ancillary equipment has been properly installed, has sufficient structural integrity and is acceptable for the storage of 20,895 gallons of waste solvents and water.

I certify under penalty of law that this document and all attachments were prepared under my direction in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


A. E. REISS, P.E.

#2718



July 29, 1992



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CERTIFICATION - ABOVE GROUND TANK SYSTEM

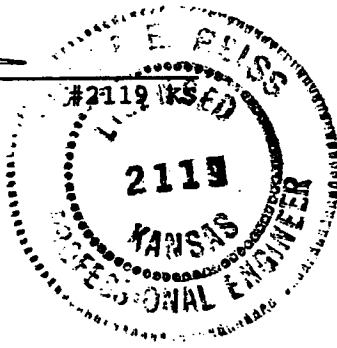
I, A.E. Reiss, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

- 1) The ancillary system of tank V-6 was modified in June of 1992;
- 2) The foundation, structural support, seams, connections and pressure controls for the tank system V-6 have been adequately designed and the tank system V-6 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 3) That the tank system V-6 was inspected on July 1, 1992 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 4) That the associated ancillary equipment for tank V-6 was tightness tested while under the working pressure of 30 PSI on July 1, 1992 and it was found that such tank system tested positive for tightness; and
- 5) That all ancillary equipment associated with the tank system V-6 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

I certify that, in my opinion as a registered professional engineer trained and experienced in the proper installation of the above tank system and components, that tank system and ancillary equipment has been properly installed, has sufficient structural integrity and is acceptable for the storage of 20,895 gallons of waste solvents and water.

I certify under penalty of law that this document and all attachments were prepared under my direction in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


A. E. REISS, P.E.



July 29, 1992



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CERTIFICATION - ABOVE GROUND TANK SYSTEM

I, A.E. Reiss, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

- 1) The ancillary system of tank V-26 was modified in June of 1992;
- 2) The foundation, structural support, seams, connections and pressure controls for the tank system V-26 have been adequately designed and the tank system V-26 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system.
- 3) That the tank system V-26 was inspected on July 1, 1992 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 4) That the associated ancillary equipment for tank V-26 was tightness tested while under the working pressure of 30 PSI on July 1, 1992 and it was found that such tank system tested positive for tightness; and
- 5) That all ancillary equipment associated with the tank system V-26 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

I certify that, in my opinion as a registered professional engineer trained and experienced in the proper installation of the above tank system and components, that tank system and ancillary equipment has been properly installed, has sufficient structural integrity and is acceptable for the storage of 329 gallons of waste solvents and water.

I certify under penalty of law that this document and all attachments were prepared under my direction in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


A. E. REISS, P.E.



July 29, 1992



REISS & GOODNESS ENGINEERS

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CERTIFICATION - ABOVE GROUND TANK SYSTEM

I, A.E. Reiss, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

- 1) A larger manway was installed in tank V-7 in June of 1992;
- 2) The foundation, structural support, seams, connections and pressure controls for the tank system V-7 have been adequately designed and the tank system V-7 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 3) That the tank system V-7 was inspected on July 1, 1992 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 4) That the tank system V-7 and associated ancillary equipment was tightness tested while under the working pressure of 15 PSI on July 1, 1992 and it was found that such tank system tested positive for tightness;
- 5) That the associated ancillary equipment for tank V-7 was tightness tested while under the working pressure of 30 PSI on July 1, 1992 and it was found that such tank system tested positive for tightness; and
- 6) That all ancillary equipment associated with the tank system V-7 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

I certify that, in my opinion as a registered professional engineer trained and experienced in the proper installation of the above tank system and components, that tank system and ancillary equipment has been properly installed, has sufficient structural integrity and is acceptable for the storage of 7,181 gallons of waste solvents and water.

I certify under penalty of law that this document and all attachments were prepared under my direction in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


A. E. REISS, P.E.



July 29, 1992



REISS & GOODNESS ENGINEERS
2100 WEST 21ST STREET - WICHITA, KANSAS 67203 2181 (316) 832-0213

CERTIFICATION - ABOVE GROUND TANK SYSTEM

I, A.E. Reiss, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

- 1) A larger manway was installed in tank V-8 and the tank was repaired in June of 1992;
- 2) The foundation, structural support, seams, connections and pressure controls for the tank system V-8 have been adequately designed and the tank system V-8 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 3) That the tank system V-8 was inspected on July 1, 1992 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 4) That the tank system V-8 was tightness tested while under the working pressure of 15 PSI on July 1, 1992 and it was found that such tank system tested positive for tightness;
- 5) That the associated ancillary equipment for tank V-8 was tightness tested while under the working pressure of 30 PSI on July 1, 1992 and it was found that such tank system tested positive for tightness; and
- 6) That all ancillary equipment associated with the tank system V-8 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

I certify that, in my opinion as a registered professional engineer trained and experienced in the proper installation of the above tank system and components, that tank system and ancillary equipment has been properly installed, has sufficient structural integrity and is acceptable for the storage of 7,181 gallons of waste solvents and water.

I certify under penalty of law that this document and all attachments were prepared under my direction in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


A. E. REISS, P.E.



July 29, 1992



REISS & GOODNESS ENGINEERS

2160 WEST 21ST STREET - WICHITA, KANSAS 67203 2181 (316) 832-0213

CERTIFICATION - ABOVE GROUND TANK SYSTEM

I, A.E. Reiss, a registered professional engineer in the State of Kansas, acting as an independent consultant for Hydrocarbon Recyclers, Inc., d/b/a/ USPCI, do hereby certify, attest, acclaim or otherwise make known to all persons with particular regards to the requirements of 40 CFR, Part 264.192 that:

- 1) That on June 28, 1992 tank system V-14 underwent modifications to install ancillary system for a portable pump and to install ancillary system for hose reel;
- 2) The foundation, structural support, seams, connections and pressure controls for the tank system V-14 have been adequately designed and the tank system V-14 has sufficient structural strength, is compatible with waste solvents and water and has adequate corrosion protection to ensure that it will not collapse, rupture, or fail during the expected life of the tank system;
- 3) That the tank system V-14 was inspected on June 30, 1992 for weld breaks, punctures, scrapes of protective coating, cracks, leaks, corrosion and any other structural damage or inadequacies of construction/installation and all discrepancies that were found have been corrected;
- 4) That the associated ancillary equipment for tank V-14 was tightness tested while under the working pressure of 30 PSI on June 30, 1992 and it was found that such tank system tested positive for tightness; and
- 5) That all ancillary equipment associated with the tank system V-14 is properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

I certify that, in my opinion as a registered professional engineer trained and experienced in the proper installation of the above tank system and components, that tank system and ancillary equipment has been properly installed, has sufficient structural integrity and is acceptable for the storage of 5,078 gallons of waste solvents and water.

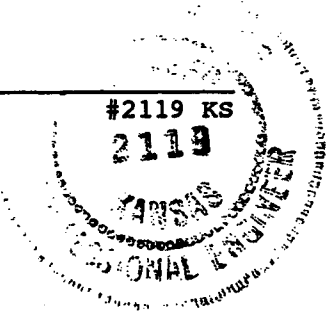
I certify under penalty of law that this document and all attachments were prepared under my direction in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


A. E. REISS, P.E.

#2119 KS

2119

July 29, 1992



Clean Harbors Kansas, LLC

RCRA Permit Application

Section E

Tank Systems

Appendix E-A - Tank System Assessments and Certifications

Attachment 3, Compatibilities of Wastes with Tank Materials

July 25, 1997
Revision No. 8

COMPATIBILITY OF WASTE WITH TANK MATERIALS

Tank 1

Tank Material - A36 Steel

Service: Wastewater

Wastewater contaminated with solvents such as oil, ethanol, heptane, hexane, xylene, toluene, trichloroethane, perchloroethylene, methyl ethyl ketone, methyl isobutyl ketone, acetone, and stoddard solvent.

May also be used for kiln fuel wastes which include water and solvents such as oil, ethanol, heptane, hexane, xylene, toluene, trichloroethane, perchloroethylene, methyl ethyl ketone, methyl isobutyl ketone, acetone, and stoddard solvent.

Hazardous Characteristics of Waste: Ignitability, toxicity, and reactivity.

Tank Inspection Results:

Tank thicknesses were measured and were found to have acceptable decreases in thickness due to corrosion or incompatibility. (See individual tank data sheets and historical test results).

Compatibility Data:
(Published data for applicable solvents)

The compatibility charts contained in Corrosion Data Survey, 6th Edition, published by the National Association of Corrosion Engineers show that the average penetration rates for acetone, methyl ethyl ketone, methyl, isobutyl ketone, perchloroethylene, trichloroethane, trichloroethylene and xylene on steel to be less than .020 inches per year.

Table 23-2 from Perry's Chemical Engineers Handbook shows that the corrosion rate of ethanol and methanol on steel are less than .02 inches per year.

Control of Hazardous Characteristics:

Tank is closed to prevent physical contact with the waste or its vapors and to prevent sources of ignition from contacting the waste. The tank is constructed of nonflammable material, (steel). Tank is vented through a demister to atmosphere.

COMPATIBILITY OF WASTE WITH TANK MATERIALS

Tanks 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14 and 17

Tank Material - A36 Steel

Service: Waste Solvents and Water

The waste solvents may include diesel, oil, ethanol, heptane, hexane, xylene, toluene, trichloroethane, perchloroethylene, methyl ethyl ketone, methyl isobutyl ketone, acetone, stoddard solvent, and dioxane.

Hazardous Characteristics of Waste: Ignitability, toxicity, and reactivity.

Tank Inspection Results:

Tank thicknesses were measured and were found to have acceptable decreases in thickness due to corrosion or incompatibility. (See individual tank data sheets and historical test results).

Compatibility Data:

(Published data for applicable solvents)

The compatibility charts contained in Corrosion Data Survey, 6th Edition, published by the National Association of Corrosion Engineers show that the average penetration rates for acetone, methyl ethyl ketone, methyl, isobutyl ketone, perchloroethylene, trichloroethane, trichloroethylene and xylene on steel to be less than .020 inches per year.

Table 23-2 from Perry's Chemical Engineers Handbook shows that the corrosion rate of ethanol and methanol on steel are less than .02 inches per year.

Control of Hazardous Characteristics:

Tank is closed to prevent physical contact with the waste or its vapors and to prevent sources of ignition from contacting the waste. The tank is constructed of nonflammable material, (steel). Tank is vented through a demister to atmosphere.

COMPATIBILITY OF WASTE WITH TANK MATERIALS

Tank 11

Tank Material - A36 Steel

Service: Waste perchloroethylene

Perchloroethylene contaminated with oil and dirt

Hazardous Characteristics of Waste: Toxicity and reactivity.

Tank Inspection Results:

Tank thicknesses were measured and were found to have acceptable decreases in thickness due to corrosion or incompatibility. (See individual tank data sheets and historical test results).

Compatibility Data:

(Published data for applicable solvents)

The compatibility charts contained in Corrosion Data Survey, 6th Edition, published by the National Association of Corrosion Engineers show that the average penetration rates for acetone, methyl ethyl ketone, methyl, isobutyl ketone, perchloroethylene, trichloroethane, trichloroethylene and xylene on steel to be less than .020 inches per year.

Table 23-2 from Perry's Chemical Engineers Handbook shows that the corrosion rate of ethanol and methanol on steel are less than .02 inches per year.

Control of Hazardous Characteristics:

Tank is closed to prevent physical contact with the waste and to prevent potentially toxic vapors from contacting personnel. Tank is vented through a demister to atmosphere.

COMPATIBILITY OF WASTE WITH TANK MATERIALS

Tank 15a, 15b, 15c, 15d and 16

Tank Material - A36 Steel

Service: Wastewater

Wastewater contaminated with solvents such as oil, ethanol, heptane, hexane, xylene, toluene, trichloroethane, perchloroethylene, methyl ethyl ketone, methyl isobutyl ketone, acetone, and stoddard solvent.

Hazardous Characteristics of Waste: Possible ignitability, toxicity, and reactivity.

Tank Inspection Results:

Tank thicknesses were measured and were found to have acceptable decreases in thickness due to corrosion or incompatibility. (See individual tank data sheets and historical test results).

Compatibility Data:

(Published data for applicable solvents)

The compatibility charts contained in Corrosion Data Survey, 6th Edition, published by the National Association of Corrosion Engineers show that the average penetration rates for acetone, methyl ethyl ketone, methyl, isobutyl ketone, perchloroethylene, trichloroethane, trichloroethylene and xylene on steel to be less than .020 inches per year.

Table 23-2 from Perry's Chemical Engineers Handbook shows that the corrosion rate of ethanol and methanol on steel are less than .02 inches per year.

Control of Hazardous Characteristics:

Tank is closed to prevent physical contact with the waste and to prevent sources of ignition from contacting the waste. The tank is constructed of nonflammable material, (steel). Tank is vented through a demister to atmosphere.

COMPATIBILITY OF WASTE WITH TANK MATERIALS

Tank 18

Tank Material - A36 Steel

Service: Wastewater

Wastewater contaminated with solvents such as oil, ethanol, heptane, hexane, xylene, toluene, trichloroethane, perchloroethylene, methyl ethyl ketone, methyl isobutyl ketone, acetone, and stoddard solvent.

Hazardous Characteristics of Waste: Possible ignitability, toxicity, and reactivity.

Tank Inspection Results:

Tank thicknesses were measured and were found to have acceptable decreases in thickness due to corrosion or incompatibility. (See individual tank data sheets and historical test results).

Compatibility Data:

(Published data for applicable solvents)

The compatibility charts contained in Corrosion Data Survey, 6th Edition, published by the National Association of Corrosion Engineers show that the average penetration rates for acetone, methyl ethyl ketone, methyl, isobutyl ketone, perchloroethylene, trichloroethane, trichloroethylene and xylene on steel to be less than .020 inches per year.

Table 23-2 from Perry's Chemical Engineers Handbook shows that the corrosion rate of ethanol and methanol on steel are less than .02 inches per year.

Control of Hazardous Characteristics:

Tank is closed to prevent physical contact with the waste and to prevent sources of ignition from contacting the waste. The tank is constructed of nonflammable material, (steel). Tank is vented to atmosphere.

COMPATIBILITY OF WASTE WITH TANK MATERIALS

Tank 24

Tank Material - A36 Steel

Service: Waste Solvents and Water

The waste solvents may include diesel, oil, ethanol, heptane, hexane, xylene, toluene, trichloroethane, perchloroethylene, methyl ethyl ketone, methyl isobutyl ketone, acetone, stoddard solvent, and dioxane.

Hazardous Characteristics of Waste: Ignitability, toxicity, and reactivity.

Tank Inspection Results:

Tank thicknesses were measured and were found to have acceptable decreases in thickness due to corrosion or incompatibility. (See individual tank data sheets and historical test results).

Compatibility Data:

(Published data for applicable solvents)

The compatibility charts contained in Corrosion Data Survey, 6th Edition, published by the National Association of Corrosion Engineers show that the average penetration rates for acetone, methyl ethyl ketone, methyl, isobutyl ketone, perchloroethylene, trichloroethane, trichloroethylene and xylene on steel to be less than .020 inches per year.

Table 23-2 from Perry's Chemical Engineers Handbook shows that the corrosion rate of ethanol and methanol on steel are less than .02 inches per year.

Control of Hazardous Characteristics:

Tank is closed to prevent physical contact with the waste or its vapors and to prevent sources of ignition from contacting the waste. The tank is constructed of nonflammable material, (steel). Tank is vented to atmosphere.

COMPATIBILITY OF WASTE WITH TANK MATERIALS

Tank 26

Tank Material - A36 Steel

Service: Waste Solvents and Water

The waste solvents may include diesel, oil, ethanol, heptane, hexane, xylene, toluene, trichloroethane, perchloroethylene, methyl ethyl ketone, methyl isobutyl ketone, acetone, stoddard solvent, and dioxane.

Hazardous Characteristics of Waste: Ignitability, toxicity, and reactivity.

Tank Inspection Results:

Tank thicknesses were measured and were found to have acceptable decreases in thickness due to corrosion or incompatibility. (See individual tank data sheets and historical test results).

Compatibility Data:

(Published data for applicable solvents)

The compatibility charts contained in Corrosion Data Survey, 6th Edition, published by the National Association of Corrosion Engineers show that the average penetration rates for acetone, methyl ethyl ketone, methyl, isobutyl ketone, perchloroethylene, trichloroethane, trichloroethylene and xylene on steel to be less than .020 inches per year.

Table 23-2 from Perry's Chemical Engineers Handbook shows that the corrosion rate of ethanol and methanol on steel are less than .02 inches per year.

Control of Hazardous Characteristics:

Tank is constructed of nonflammable material,(steel). Sources of ignition are not allowed near the tank. Personnel in the vicinity of the tank wear protective clothing to prevent contact with potentially toxic liquids or vapors. Tank is vented to atmosphere.

COMPATIBILITY OF WASTE WITH TANK MATERIALS

Tank 34

Tank Material - A36 Steel

Service: Waste solvents and water

Diesel contaminated with water and solvents such as oil, ethanol, heptane, hexane, xylene, toluene, trichloroethane, perchloroethylene, methyl ethyl ketone, methyl isobutyl ketone, acetone, and stoddard solvent.

Hazardous Characteristics of Waste: Ignitability, toxicity, and reactivity.

Tank Inspection Results:

Tank thicknesses were measured and were found to have acceptable decreases in thickness due to corrosion or incompatibility. (See individual tank data sheets and historical test results).

Compatibility Data:

(Published data for applicable solvents)

The compatibility charts contained in Corrosion Data Survey, 6th Edition, published by the National Association of Corrosion Engineers show that the average penetration rates for acetone, methyl ethyl ketone, methyl, isobutyl ketone, perchloroethylene, trichloroethane, trichloroethylene and xylene on steel to be less than .020 inches per year.

Table 23-2 from Perry's Chemical Engineers Handbook shows that the corrosion rate of ethanol and methanol on steel are less than .02 inches per year.

Control of Hazardous Characteristics:

Tank is constructed of nonflammable material, (steel). Sources of ignition are not allowed near the tank. Concentrations of potentially toxic compounds are low, so as not to pose much of a health hazard. Personnel in the vicinity of the tank wear protective clothing to prevent contact with potentially toxic liquids or vapors. Tank is vented to atmosphere.

Clean Harbors Kansas, LLC

RCRA Permit Application

Section E

Tank Systems

Appendix E-A - Tank System Assessments and Certifications

Attachment 4, Tank System Field Notes

July 25, 1997
Revision No. 8

HRS; WICHITA, KANSAS

2ND VISIT 7/25/91
3RD VISIT 9/5/91

PIPE SUPPORT 9/18/91

TANK #	FOUNDATION REVIEW	EXTERIOR TANK REVIEW			PIPE TESTING		PIPE SUPPORT
		STRUC	PAINT	REVIEW FAST CLEAN SHELL	INLET	OUTLET	
U1	OK	OK	OK	-	5:10 32.5 OK	11:00A 29.5 OK	END NEEDS SUPPORT
U2	OK	OK	OK	-	5:15 29.5 OK	X	OK
U3	OK	OK	OK	-	5:10 29 OK	11:00 30 OK	OK
U4	OK	OK	OK	-	9:30 30 OK	1:45P 29.75 OK	OK
U5	OK	MANWAY ADDED	OK	-	3:30 29.25 OK	1:45P 29.5 OK	OK 9/5/91
U6	OK	OK	OK	-	3:30 29.25 OK	1:45P 29.5 OK	OK 9/5/91
U7	OK	OK	OK	-	5:10 30 OK	1:45P 32.75 OK	OK
U8	OK	OK	OK	-	6:00 30 OK	11:00A 30 OK	END NEEDS SUPPORT
U9	OK	OK	OK	-	X	11:00A 29.5 OK	OK
U10	OK	OK	OK	-	X	11:00A 29.5 OK	
U11	OK	OK	OK	-	X	1:45P 29.75 OK	
U12	OK	OK	OK	-	X	9:30 29.5 OK	
U13	OK	OK	OK	-	X	11:00A 30 - OK	
U14	OK	OK	OK	-	X	9:30 29.75 OK	
U15A	OK	OK	OK	-	X	1:45P 29 OK	
U15B	OK	OK	OK	-	X	1:45P 29 OK	
U15C	OK	OK	OK	✓	X	1:45P 29 OK	OK
U16	OK	OK	OK	✓	X	1:45 30X- OK	OK
U18	OK	OK	OK	NA	X	X	OK
U24	OK	OK	OK	NA	X	X	OK
U26	OK	OK	OK	NA	X	X	NEEDS X-BRACING
U34	OK	OK	OK	NA	X	X	X
SOLIDS LINE DRYER	NA	NA	NA		X	11:00A 30.5 OK	OK
U15D	OK	OK	OK	✓	X	1:45P 29 OK	OK
U17	OK	OK	OK	NA	X	X	NA

DOSE
9/5/91

10:30P 30
1:00P 15

DOSE
9/5/91

DOSE
9/5/91

24
PIXES

SPENDER

RUM WASH

SOLIDS LINE
DRYER

TANK CERTIFICATION FOR U1

DATE: 7/25/91 - 2ND VISIT

EXTERIOR REVIEW

PAINT-

BOT OK
SIDES OK

TOP OK

STRUCTURE-

NO SIGNS OF DISTRESS
OR WELD FAILURE

SHELL THICKNESSES- 7/89 TO 11/90 CORROSION RATES OK

PICTURES- FIRST VISIT

FOUNDATION REVIEW

NO SIGNS OF SETTLEMENT, CRACKING
OR FAILURE

PIPE TESTING

TANK
INLET-

Date	Time	Pressure	
7/25	11:15A - 1:00P	14PSI	OK
7/25	5:10P - 7:00P	30(+)-PSI	OK

OUTLET-

7/25 11:00A - 1:00P 29.5PSI OK

SUPPORTS-

END SUPPORT REQUIRED
7/25/91

LOVE &
COMPLETE 9/5/91

CONTAINMENT

SEE SEPARATE SHEET

TANK CERTIFICATION FOR U2

DATE: 7/25/91 2ND VISIT

EXTERIOR REVIEW

PAINT-

SIDES - OK

TOP OK

STRUCTURE-

HORIZ. TANK TURNED VERT.
NO SIGNS OF DISTRESS OR WELD FAILURE

SHELL THICKNESSES-

7/89 TO 11/90 CORROSION RATES OK

PICTURES-

FIRST TRIP

FOUNDATION REVIEW

NO SIGNS OF SETTLEMENT, CRACKING OR
FAILURE

PIPE TESTING

	<u>Date</u>	<u>Time</u>	<u>Pressure</u>
INLET-	5/25	5:45P-7:00P	29.5PSI OK
OUTLET-	NA		
SUPPORTS-	OK		

CONTAINMENT

SEE SEPARATE SHEET

TANK CERTIFICATION FOR U3

DATE: 7/25/91 2ND VISIT

EXTERIOR REVIEW

PAINT-

BOT OK.

TOP OK

STRUCTURE-

SIDES OK
NO SIGNS OF DISTRESS OR WELD FAILURE

SHELL THICKNESSES-

7/89 TO 11/90 CORROSION RATES OK

PICTURES-

LAST VISIT

FOUNDATION REVIEW

SHRINKAGE CRACK RUNS PARALLEL TO
WEST LEGS BUT NOT CAUSED BY SETTLEMENT
OR FOUNDATION FAILURE

PIPE TESTING

	<u>Date</u>	<u>Time</u>	<u>Pressure</u>	
TANK	7/25	2:00-5:00P	15 PSI	OK
INLET-	7/25	5:10P-7:00P	29 PSI	OK
OUTLET-	7/25	11:00-1:00P	30 PSI	OK
SUPPORTS-	OK			

CONTAINMENT

SEE SEPARATE SHEET

TANK CERTIFICATION FOR V4

DATE: 7/25/91 2ND VISIT

EXTERIOR REVIEW

PAINT-

BOT OK
SIDES OK

TOP OK

STRUCTURE-

NO SIGNS OF DISTRESS OR WELD FAILURES

SHELL THICKNESSES-

7/89 TO 11/90 CORROSION RATES OK
(ONE LOW READING IN 11/90 NEEDS WATCHING)

PICTURES-

FIRST VISIT

FOUNDATION REVIEW

NO SIGNS OF SETTLEMENT, CRACKING OR FAILURE

PIPE TESTING

TANK
INLET-

Date
7/25

Time

Pressure

3:00 P-5:00 P

14 PSI OK

5:10 P

29.5 PSI NOT OK

9:30 A - 11:30 A

30 PSI OK

OUTLET-

7/25

11:00 A

29.25 PSI NOT OK

1:45 P - 3:45 P

28.75 PSI OK

SUPPORTS-

OK

CONTAINMENT

SEE SEPARATE SHEET

TANK CERTIFICATION FOR U5

DATE: 7/25/91 2ND VISIT

EXTERIOR REVIEW

PAINT-

BOT OK TOP OK

STRUCTURE-

SIDES OK BUT WEST SIDE HAS SOME PEELING PAINT
C CATWALK

SHELL THICKNESSES-

NO SIGNS OF DISTRESS OR WELD FAILURE
NEW MANWAY ADDED NEXT TO OLD ONE.

PICTURES-

LAST VISIT

FOUNDATION REVIEW

NO SIGNS OF FOUNDATION SETTLEMENT, CRACKING OR
FAILURE

PIPE TESTING

	<u>Date</u>	<u>Time</u>	<u>Pressure</u>	
INLET-	7/25	5:00	29	NOT OK
	7/26	8:30A	29.5PSI	
OUTLET-	7/25	11:00A	29.5	NOT OK
		1:46 P-3:45P	29.5	OK
SUPPORTS-	OK			

CONTAINMENT

SEE SEPARATE SHEET

TANK CERTIFICATION FOR V6

DATE: 7/25/91 - 2ND VISIT

EXTERIOR REVIEW

PAINT- BOT LIGHT FLAKING ON SOUTH END TOP OK
SIDES OK
STRUCTURE- SHRINKAGE CRACK COMES OFF THE PIPE TROUGH
SHELL THICKNESSES- 7/89 TO 11/90 CORROSION RATES OK
PICTURES- FIRST VISIT

FOUNDATION REVIEW

SHRINKAGE CRACK COMES OFF THE NORTH END
OF PIPE TROUGH BUT IS NOT DUE TO FOUNDATION
SETTLEMENT OR FAILURE

PIPE TESTING

	<u>Date</u>	<u>Time</u>	<u>Pressure</u>	
INLET-	7/25	5:00P	29.5	NOT OK
	7/26	8:30A	29.5 PSI	
OUTLET-	7/25	11:00A	29.5 PSI	NOT OK
		1:45P - 3:45P	29.5	OK
SUPPORTS-	OK			

CONTAINMENT

SEE SEPARATE SHEET

TANK CERTIFICATION FOR V7

DATE: 7/25/91 2ND VISIT

EXTERIOR REVIEW

PAINT- BOT OK
SIDES OK

TOP OK

STRUCTURE- NO SIGNS OF DISTRESS OR WELD FAILURE

SHELL THICKNESSES- 7/89 TO 11/90 CORROSION RATES OK

PICTURES- FIRST VISIT

FOUNDATION REVIEW NO SIGNS OF FOUNDATION SETTLEMENT,
CRACKING OR FAILURE

PIPE TESTING

	<u>Date</u>	<u>Time</u>	<u>Pressure</u>	
TANK	7/25	2:50-5:00P	14PSI	OK
INLET-	7/25	5:10P-7:00P	30PSI	OK
OUTLET-	7/25	1:45P-3:45P	30.75PSI	OK
SUPPORTS-	OK			

CONTAINMENT SEE SEPARATE SHEET

TANK CERTIFICATION FOR UB

DATE: 7/25/91 2ND VISIT

EXTERIOR REVIEW

PAINT- BOT - MINOR FLAKING TOP OK
SIDES - OK

STRUCTURE- NO SIGNS OF DISTRESS OR WELD FAILURES

SHELL THICKNESSES- 7/89 TO 11/90 CORROSION RATES OK

PICTURES- FIRST VISIT

FOUNDATION REVIEW

NO SIGNS OF FOUNDATION SETTLEMENT, CRACKING
OR FAILURE

PIPE TESTING

	<u>Date</u>	<u>Time</u>	<u>Pressure</u>	
TANK	7/25	11:45-5:00 P	14 PSI	OK
INLET-	7/25	6:00 P-7:00	30 PSI	OK

OUTLET-	7/25/91	11:00 A	30 PSI	OK
---------	---------	---------	--------	----

SUPPORTS-

END SUPPORT FOR PIPES REQUIRED 7/25/91
DONE & COMPLETE 9/5/91

CONTAINMENT

SEE SEPARATE SHEET

TANK CERTIFICATION FOR U9

DATE: 7/25/91 2ND VISIT

EXTERIOR REVIEW

PAINT-

SIDES OK.

END OK

STRUCTURE-

NO SIGNS OF DISTRESS OR WELD FAILURES

SHELL THICKNESSES- 7/89 TO 11/90 CORROSION RATES OK

PICTURES- FIRST VISIT

FOUNDATION REVIEW

FOOTINGS DO NOT SHOW ANY SIGNS OF
SETTLEMENT, CRACKING OR FAILURE

PIPE TESTING

Date

Time

Pressure

INLET-

NA

OUTLET-

7/25

11:00A

29.5 PSI OK

SUPPORTS-

OK

CONTAINMENT

SEE SEPARATE SHEET

TANK CERTIFICATION FOR UIC

DATE: 7/25/91 2ND VISIT

EXTERIOR REVIEW

PAINT- SIDES - OK

ENDS - OK

STRUCTURE- NO SIGNS OF DISTRESS OR WELD FAILURE

SHELL THICKNESSES- 7/29 TO 11/90 CORROSION RATES OK

PICTURES- FIRST VISIT

FOUNDATION REVIEW

FOOTINGS SHOW NO SIGNS OF SETTLEMENT,
CRACKING OR FAILURE

PIPE TESTING

	<u>Date</u>	<u>Time</u>	<u>Pressure</u>	
INLET-	DA			
OUTLET-	7/25	11:00A	29.5PSI	OK
SUPPORTS-	OK			

CONTAINMENT

SEE SEPARATE SHEET

TANK CERTIFICATION FOR U11

DATE: 7/25/91 2ND VISIT

EXTERIOR REVIEW

PAINT- SIDES -OK

ENDS -OK

STRUCTURE- NO SIGNS OF DISTRESS OR WELD FAILURE

SHELL THICKNESSES- 7/89 TO 11/90 CORROSION RATES OK

PICTURES- FIRST VISIT

FOUNDATION REVIEW

FOOTING SHOWS NO SIGNS OF SETTLEMENT, CRACKING OR FAILURE

PIPE TESTING

	<u>Date</u>	<u>Time</u>	<u>Pressure</u>	
INLET-	NA			
OUTLET-	7/25	1:45P-3:45P	28.75 PSI	OK
SUPPORTS-	OK			

CONTAINMENT

SEE SEPARATE SHEET

TANK CERTIFICATION FOR U12

DATE: 7/25/91 - 2ND VISIT

EXTERIOR REVIEW

PAINT- SIDES - OK
ENDS - OK

STRUCTURE- NO SIGNS OF DISTRESS OR WELD FAILURE.

SHELL THICKNESSES- 7/89 TO 11/90 CORROSION RATES OK

PICTURES- FIRST VISIT

FOUNDATION REVIEW

FOOTINGS SHOW NO SIGNS OF SETTLEMENT, CRACKING
OR FAILURE

PIPE TESTING

	<u>Date</u>	<u>Time</u>	<u>Pressure</u>	
TANK INLET-	7/25	3:00	12 PSI	
	NA			
OUTLET-	7/25	1:45 P	29.25 PSI	NOT OK
	7/26	9:30 A	29.5 PSI	OK
SUPPORTS-	OK			

CONTAINMENT

SEE SEPARATE SHEET

TANK CERTIFICATION FOR U13

DATE: 7/25/91 2ND VISIT

EXTERIOR REVIEW

PAINT- SIDES - OK
ENDS - OK
STRUCTURE- NO SIGNS OF DISTRESS OR WELD FAILURE
SHELL THICKNESSES- 7/89 TO 11/90 CORROSION RATES OK
PICTURES- FIRST VISIT

FOUNDATION REVIEW

FOOTINGS SHOW NO SIGNS OF SETTLEMENT, CRACKING OR FAILURE

PIPE TESTING

	<u>Date</u>	<u>Time</u>	<u>Pressure</u>	
INLET-	NA			
OUTLET-	7/25	11:00A	30(-)	OK
SUPPORTS-	OK			

CONTAINMENT

SEE SEPARATE SHEET

TANK CERTIFICATION FOR U14

DATE: 7/25/91 2ND VISIT

EXTERIOR REVIEW

PAINT- SIDES -OK
ENDS - OK

STRUCTURE- NO SIGNS OF DISTRESS OR WELD FAILURE

SHELL THICKNESSES- 7/89 TO 11/90 CORROSION RATES OK

PICTURES- FIRST VISIT

FOUNDATION REVIEW

FOOTINGS SHOW NO SIGNS OF SETTLEMENT, CRACKING OR FAILURE

PIPE TESTING

	<u>Date</u>	<u>Time</u>	<u>Pressure</u>	
INLET-	NA			
OUTLET-	7/25	11:00A	30. PSI	OK
SUPPORTS-	OK			

CONTAINMENT SEE SEPARATE SHEET

TANK CERTIFICATION FOR U15A

DATE: 7/25/91 2ND VISIT

EXTERIOR REVIEW

PAINT- SIDES - OK
ENDS - OK
STRUCTURE- SLIGHT DISTORTION @ TANK SADDLES BUT
TANK IS SOUND
SHELL THICKNESSES- 7/89 TO 11/90 CORROSION RATES OK
PICTURES- FIRST VISIT

FOUNDATION REVIEW

NO SIGNS OF SETTLEMENT, CRACKING OR
FAILURE

PIPE TESTING

	<u>Date</u>	<u>Time</u>	<u>Pressure</u>
INLET-	HA		
OUTLET-	7/25	1:45P-3:45P	29 PSI OK
SUPPORTS-	OK		

CONTAINMENT

SEE SEPARATE SHEET

TANK CERTIFICATION FOR V15B-C

DATE: 7/25/91 2ND REVIEW

EXTERIOR REVIEW

PAINT-

SIDES - OK
ENDS - OK

STRUCTURE-

SLIGHT DISTORTION AT TANK SADDLES, BUT
TANK IS STILL SOUND

SHELL THICKNESSES- 15B - 7/29 TO 11/90 CORROSION RATES OK

15C - 7/29 TO 11/90 CORROSION RATES OK

PICTURES-

FIRST VISIT

FOUNDATION REVIEW

NO SIGNS OF SETTLEMENT, CRACKING OR
FAILURE

PIPE TESTING

INLET-

Date

Time

Pressure

NA

OUTLET-

7/25

1:45 P. 3:45

29 PSI OK

SUPPORTS-

OK

CONTAINMENT

SEE SEPARATE SHEET

TANK CERTIFICATION FOR U15D

DATE: 7/25/91 2ND VISIT

EXTERIOR REVIEW

PAINT- SIDES - OK
ENDS - OK

STRUCTURE- ENDS SHOW SIGNS OF MAJOR DISTORTION. WILL
LOAD TEST TANK & OBSERVE PERFORMANCE

SHELL THICKNESSES-
GAGED SHELL THICKNESS OK

PICTURES- ✓

FOUNDATION REVIEW

NO SIGNS OF SETTLEMENT, CRACKING OR
FAILURE.

PIPE TESTING

	<u>Date</u>	<u>Time</u>	<u>Pressure</u>	
TANK INLET-	7/26 NA	9:30A	15 PSI	HELD WITHOUT SIGNS OF DISTRESS, LEAKAGE OR WELD FAILURES
OUTLET-	7/25	1:45 P-3:45	29 PSI	OK
SUPPORTS-	OK			

CONTAINMENT

SEE SEPARATE SHEET

TANK CERTIFICATION FOR U16

DATE: 7/25/91 2ND VISIT

EXTERIOR REVIEW

PAINT- SIDES - OK

ENDS - OK

STRUCTURE- NO SIGNS OF DISTRESS OR WELD FAILURES

SHELL THICKNESSES- 7/89 TO 11/90 CORROSION RATES OK

PICTURES- ✓

FOUNDATION REVIEW

NO SIGNS OF SETTLEMENT, CRACKING OR FAILURE

PIPE TESTING

Date

Time

Pressure

INLET-

OUTLET-

7/25

1:45-3:45

30(-) PSI

OK

SUPPORTS-

OK

CONTAINMENT

SEE SEPARATE SHEET

TANK CERTIFICATION FOR U17

DATE: 7.25.91

EXTERIOR REVIEW

PAINT- PAINT ACCEPTABLE

STRUCTURE- FRAME ADEQUATELY BRACED

SHELL THICKNESSES- N.A.

PICTURES- NO

FOUNDATION REVIEW NO SIGNS OF DISTRESS

PIPE TESTING

	<u>Date</u>	<u>Time</u>	<u>Pressure</u>
INLET-	NA		
OUTLET-	NA		
SUPPORTS-	NA		

CONTAINMENT

SEE SEPARATE SHEET

TANK CERTIFICATION FOR U18

DATE: 7/25/91 2ND VISIT

EXTERIOR REVIEW

PAINT- SIDES - OK

ENDS - OK

STRUCTURE- NO SIGNS OF DISTRESS OR WELD FAILURES

SHELL THICKNESSES- N.A.

PICTURES- FIRST TRIP

FOUNDATION REVIEW

NO SIGNS OF CRACKING, SETTLEMENT OR FAILURE

PIPE TESTING

	<u>Date</u>	<u>Time</u>	<u>Pressure</u>
INLET-	NA		
OUTLET-	NA		
SUPPORTS-	OK		

CONTAINMENT

SEE SEPARATE SHEET

TANK CERTIFICATION FOR V24

DATE: 7/25/91 2ND VISIT

EXTERIOR REVIEW

PAINT- TOP - OK
SIDES - OK

STRUCTURE- NO SIGNS OF DISTRESS OR WELD FAILURES
ON PLATFORM

SHELL THICKNESSES- N.A.

PICTURES- ✓

FOUNDATION REVIEW

NO SIGNS OF SETTLEMENT, CRACKING OR
FAILURE

PIPE TESTING

	<u>Date</u>	<u>Time</u>	<u>Pressure</u>
INLET-	NA		
OUTLET-	NA		
SUPPORTS-	OK		

CONTAINMENT

SEE SEPARATE SHEET

TANK CERTIFICATION FOR U26 - DISPERSER DATE: 7/25/91 2ND VISIT

EXTERIOR REVIEW

PAINT-COATED WITH YEARS OF SPILLAGE

STRUCTURE- OK

SHELL THICKNESSES- N.A

PICTURES- ✓

FOUNDATION REVIEW

NO SIGNS OF SETTLEMENT, CRACKING
OR FAILURE

PIPE TESTING

Date

Time

Pressure

INLET-

OUTLET-

SUPPORTS-

OVERHEAD RACK
NEEDS X-RAYING 7/25/91

DONE & COMPLETE
9/5/91

CONTAINMENT - SEE SEPARATE SHEET

TANK CERTIFICATION FOR U34

DATE: 7/25/91 2ND VISIT

EXTERIOR REVIEW

PAINT- COATED WITH YEARS OF SPILLAGE

STRUCTURE- NO SIGNS OF DISTRESS OR WELD FAILURE BUT
NEEDS TO BE BOLTED TO FOUNDATION

SHELL THICKNESSES- N.A.

PICTURES- ✓

FOUNDATION REVIEW

NO SIGNS OF CRACKING, SETTLEMENT OR
FAILURE

PIPE TESTING

	<u>Date</u>	<u>Time</u>	<u>Pressure</u>
INLET-	NA		
OUTLET-	NA		
SUPPORTS-	NA		

CONTAINMENT

SEE SEPARATE SHEET

Clean Harbors Kansas, LLC

RCRA Permit Application

Section E

Tank Systems

Appendix E-A - Tank System Assessments and Certifications

Attachment 5, Examples of Containment Coatings

July 25, 1997
Revision No. 8

TECHNICAL BULLETIN
JANUARY 1991

DESCRIPTION AND USES:

SEMSTONE 245 is a high performance specialty coating for concrete. Its unique formulation makes it suitable for constant immersion service in chlorinated solvents, such as:

- Methylene chloride
- Ethylene dichloride
- Trichloroethylene

In addition, SEMSTONE 245 offers excellent resistance to a very broad range of other hazardous and corrosive chemicals including benzene, phenol, ketones, alcohols and chromic acid, as well as such commonly encountered items as 98% sulfuric acid and 50% caustic. This makes it the preferred choice for protecting hazardous waste handling facilities and other areas that will regularly see exposure to a wide variety of difficult chemicals.

Other features include:

- Very rapid cure, providing quick turnaround of projects.
- Can be applied at temperatures as low as 35°F.
- Can be applied over damp concrete.

PACKAGING/COVERAGE:

SEMSTONE 245 is available in 1 gallon, 3 gallon and 25 gallon units. Each unit consists of premeasured Part A and Part B components. A bagged Part C thixotropic agent is added for work on vertical surfaces.

Application thickness may vary from 30 mils to 125 mils, depending on expected service conditions (i.e., chemical exposure, temperature, traffic load and other mechanical abuse, immersion service vs. splash-spill, etc.). Consult Sentry Polymers for specific thickness recommendations.

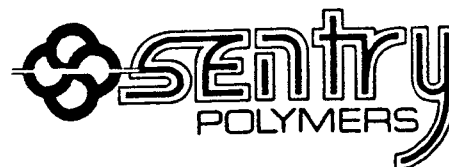
In addition, coverage rates will be effected by the condition of surface being coated (degraded vs. smooth, steel vs. concrete, etc.).

To figure THEORETICAL coverage per gallon, divide desired mil thickness into 1.604. (For example, theoretical coverage for a 60 mil thickness is: 1.604 divided by 60 = 26.73 square feet per gallon.)

For practical coverage, make necessary allowances for condition of the substrate, working conditions, waste, spillage, etc.

SEMSTONE 245

High Performance Coating



P.O. BOX 2076A
5500 E. HWY 332
FREEPORT, TX 77541

409-233-0312
800-231-2544

TYPICAL PROPERTIES:

Solids, by Volume _____ 100%
Color _____ Buff (Selected other colors optional)
Weight per Mixed Gallon _____ 10 lbs.

Cure Times (Approximate):

<u>Temperature</u>	<u>Foot Traffic</u>	<u>Chemical Service**</u>
35°F _____	24 hrs. _____	7 days
55°F _____	8 hrs. _____	48 hrs.
80°F _____	4 hrs. _____	24 hrs.

**For immersion service in chlorinated solvents, the coating must be postcured at 150°F for 12 hours.

RELATED AND ANCILLARY PRODUCTS:

SEMSTONE 140 Epoxy Floor Topping
SEMSTONE 140-CT Epoxy Floor Coating - Cold Temperature Formulation
SEMSTONE 140-S Epoxy Coating and Lining
SEMSTONE 300 Epoxy Polymer Concrete
SEM-CRETE Rapid Hardening Underlayment Mortar

Refer to separate technical bulletin on each products for its uses, application instructions, etc.

STORAGE AND SHELF LIFE:

Keep SEMSTONE 245 components tightly sealed in their original containers until ready for use. Store unopened at 50°F - 90°F, out of direct sunlight. At least 24 hours immediately prior to use, store all components (A, B, C, and aggregate) at 80°F - 90°F, to facilitate handling.

Properly stored, SEMSTONE 245 has a minimum shelf life of one year. Refer to batch number on label for date of manufacture.

CHEMICAL RESISTANCE GUIDE

This guide is intended as an aid in determining the potential usefulness of SEMSTONE 245 as a protective barrier against chemical exposure. Each application should be evaluated according to its particular circumstances and conditions.

KEY: 1 = Suitable for constant immersion
 2 = Suitable for shorter term containment and continual spillage
 3 = Suitable for intermittent spills when followed promptly with water flushing
 NR = Not recommended
 C = Consult Sentry Polymers
 * = This chemical will attack the silica aggregate in the system. When the system is applied, be especially careful that all aggregate is totally encapsulated with SEMSTONE 245.
 ** = For constant immersion service, coating must be postcured 12 hours at 150°F.
 *** = Coating may show some staining or color change when exposed to this chemical.

RATING		RATING		RATING	
Acetic Acid, 10%	1	Cyclohexane	2	Naphthalene	1
Acetic Acid, 30%	2	Cyclohexanol	2	Nitric Acid, 5%	2***
Acetic Acid, Glacial	3	Cyclohexanone	2	Nitric Acid, 30%	3***
Acetone	1	Diesel Fuel	1	Nitric Acid, 50%	NR
Acrylic Acid, up to 25 %	2	Diethyl Benzene	1	Nitrobenzene	1
Acrylonitrile	2	Dimethyl Aniline	1	n-Octyl Alcohol	1
Adipic Acid	2	Epichlorohydrin	1	Oils	1
Alum (Aluminum Potassium Sulfate)	1	Ethyl Acetate	1	Oleic Acid	2
Aluminum Chloride	1	Ethyl Acrylate	1	Oleum	2***
Aluminum Fluoride	1*	Ethyl Alcohol	1	Oxalic Acid	2
Aluminum Hydroxide	1	Ethyl Benzene	1	Perchloroethylene	1
Aluminum Nitrate	1	Ethyl Chloride	1**	Perchloric Acid	2
Aluminum Sulfate	1	Ethylene Dichloride (EDC)	1**	Phenol	2
Ammonia	2	Ethylene Glycol	1	Phosphoric Acid, 50%	1
Ammonium Bisulfite	1	Fatty Acids	1	Phosphoric Acid, 85%	1
Ammonium Chloride	1	Ferric Chloride	1***	Phosphorous Acid	2
Ammonium Hydroxide	1	Ferric Nitrate	1	Potassium Carbonate	1
Ammonium Nitrate	1	Ferric Sulfate	1	Potassium Chloride	1
Ammonium Sulfate	1	Ferrous Chloride	1	Potassium Dichromate	2
n-Amyl Alcohol	1	Fluosilicic Acid	1*	Potassium Hydroxide	1
Aniline	1	Formaldehyde	1	Potassium Nitrate	1
Barium Chloride	1	Formic Acid	2	Propionic Acid	2
Barium Hydroxide	1	Fuel Oil	1	Silver Nitrate	1***
Barium Sulfate	1	Gasoline	1	Skydroll	1
Barium Sulfide	1	Glycerine	1	Sodium Acetate	1
Benzene	1	Heptane	1	Sodium Bicarbonate	1
Benzene Sulfonic Acid	1	Hexane	1	Sodium Bisulfate	1
Benzoic Acid	1	Hydrobromic Acid	2	Sodium Bisulfite	1
Black Liquor, Pulp Mill	1	Hydrochloric Acid, 15%	1	Sodium Carbonate	1
Bleach	C	Hydrochloric Acid, 37%	1***	Sodium Chloride	1
Boric Acid	1	Hydrofluoric Acid	1*	Sodium Chlorite	2
Brine	1	Hydrogen Peroxide	2	Sodium Hydroxide, 10%	1
Bromide, Liquid	NR	Hydrogen Sulfide	1	Sodium Hydroxide, 50%	1
Bromide Gas (Dry & Wet)	3	Isopropyl Alcohol	1	Sodium Hypochlorite	C
Butyl Acetate	1	Jet Fuel	1	Sodium Sulfate	1
Butyl Acrylate	1	Kerosene	1	Sodium Sulfide	1
n-Butyl Alcohol	1	Lactic Acid	2	Stannic Chloride	1
Butyl Cellosolve Solvent	1	Lauryl Chloride	1	Stannous Chloride	1
n-Butyric Acid	2	Lead Acetate	1	Stearic Acid	1
Cadmium Chloride	1	Linseed Oil	1	Styrene	1
Calcium Chloride	1	Lithium Bromide	1	Sugar/Sucrose	1
Calcium Hydroxide	1	Lithium Chloride	1	Sulfur Dioxide	1
Calcium Hypochlorite	C	Lithium Hypochlorite	C	Sulfuric Acid, 10%	1
Calcium Nitrate	1	Lithium Hydroxide	1	Sulfuric Acid, 50%	1
Calcium Sulfate	1	Magnesium Bisulfite	1	Sulfuric Acid, 98%	1***
Calcium Sulfite	1	Magnesium Carbonate	1	Tall Oil	1
Carbon Dioxide Gas	1	Magnesium Chloride	1	Tannic Acid	1
Carbon Dissulfide	2	Magnesium Hydroxide	1	Tartaric Acid	1
Carbon Tetrachloride	1**	Magnesium Sulfate	1	Tetrahydrofuran	3
Chlorine Dioxide	2	Maleic Acid	2	Toluene	1
Chlorine Gas (Dry & Wet)	3	Mercuric Chloride	1	Toluene Sulfonic Acid	1
Chlorine Water	2	Mercurous Chloride	1	Trichloroacetic Acid	2
Chlorobenzene	1	Methanol	1	Trichloroethane	1
Chloroform	1**	Methyl Chloride	2	Trichloroethylene	1**
Chromic Acid, 25%	1***	Methylene Chloride	1**	Trisodium Phosphate	1
Chromic Acid, 50%	2***	Methyl Ethyl Ketone	1	Urea	1
Copper Nitrate	1	Methyl Methacrylate	1	Water, Deionized	1
Copper Sulfate	1	Mineral Spirits	1	Water, Demineralized	1
Corn Oil	1	Monoethanolamine	2	Water, Distilled	1
Crude Oil, Sour	1	Muriatic Acid	1	Xylene	1
Crude Oil, Sweet	1	Naphtha	1	Zinc Chloride	1
Cupric Ammonium Chloride	1			Zinc Sulfate	1

APPLICATION GUIDELINES

IMPORTANT NOTES

1. Work on vertical surfaces requires the addition of Part C thixotrope.
2. For manual applications, use only 1 gallon and 3 gallon units. The mixed material has a very short pot life, so plan your work accordingly.

TEMPERATURE CONSIDERATIONS

1. Throughout the application process, the temperature of the surface to be coated should be 35°F - 95°F.
2. Below 75°F, the components will thicken noticeably, making manual applications extremely difficult.
3. When coating steel, halt application if the temperature falls within 5°F of the dew point. (This is not necessary when coating concrete.)
4. Bubbles may appear in the SEMSTONE 245 coating if it is applied over concrete in direct sunlight, or when temperatures are rising. This is due to the expansion of air and/or moisture trapped in the concrete. It is especially true of air entrained concrete.

For best results, shade the work area and apply SEMSTONE 245 when temperatures are falling.

5. Store all materials (components A, B, C and aggregate) at 80°F - 90°F for at least 24 hours before use, to facilitate handling.

SURFACE PREPARATION - GENERAL

1. Surfaces must be free of dirt, dust, oil, grease, chemicals and other contaminants immediately prior to applying each coat of SEMSTONE 245.
2. For the initial coat, concrete surfaces can be damp.

However, for recoats, all surfaces must be dry.

SURFACE PREPARATION OF CONCRETE

1. New concrete generally should be cured a minimum of 28 days.

NOTE: Check with Sentry Polymers for recommendations regarding concrete cured less than 28 days.

2. Concrete must be structurally sound and must not contain any accelerators or curing compounds.
3. Remove all oil and grease.
4. Remove all surface laitance and expose sound concrete. We recommend abrasive blasting to do this.

However, other methods, such as acid etching and neutralizing, may be used.

5. In general, any existing coating should be completely removed.

In certain instances, this may not be necessary, but consult with Sentry Polymers first.

Always remove coatings which have failed due to lack of adhesion or thermal shock.

6. Locate all expansion joints, control joints, floor drains, equipment base plates and mid-floor termination points. Handle them as per Sentry's Construction Details.

7. Honeycombs or any form voids in vertical surfaces must be filled.

Above 50°F, use SEMSTONE 140 with Part C thixotrope and aggregate added.

Below 50°F, use SEMSTONE 140-CT with Part C aggregate added.

8. If the concrete is damp:

- a. Flush thoroughly with clear water. Steam or hot water is recommended, if available.

- b. Remove all standing water.

SURFACE PREPARATION OF STEEL (NON-IMMERSION SERVICE ONLY)

1. Abrasive blast steel surfaces to a near white metal finish with 1 - 2 mil anchor profile.
(Ref. SSPC-SP-10)
2. All outside corners must be ground smooth and rounded.
3. Round all inside corners to a minimum 1/2" radius with SEMSTONE 500 Epoxy Putty.

MASKING

Mask surfaces that are not to be coated. This material is difficult to remove, once applied.

APPLICATION EQUIPMENT

1. For spraying, use only a specially equipped plural component rig. Specifications are as follows:

Graco King Hydracat (or equivalent); 28:1 pump; 2.3 GPM, 4:1 mix ratio; inlet air pressure on pump set at 75-120 psi.

Two 15 gallon heated hopper tanks. Set heater at 95°F.

In-line heater on resin outlet, set at 110° F.

High pressure solvent pump.

Insulated hoses, 3/8 in. ID, maximum length of 100 ft.

Graco Silver Gun, or equivalent, equipped with a reversible, self-cleaning tip, orifice size .035 - .041 inches.

No filters or internal screens.

2. For manual applications:

- a. Floors - preferred method is to spread with serrated squeegee, then backroll.

As a second choice, trowel or brush could be used.

- b. Walls - use roller or brush.

MIXING AND APPLICATION

1. The components must be individually agitated immediately prior to use:

Part A - Blend each Part A component to a uniform consistency in its individual container, using a Jiffy type mixer.

Part B - Stir each Part B component to a uniform color in its individual container.

2. For work on vertical surfaces, add Part C.

Part C comes in premeasured bags.

For a one gallon unit and three gallon units, add one premeasured bag to each Part A.

For 25 gallon units, add one premeasured bag to each bucket of Part A and each bucket of Part B. (NOTE - There are 4 buckets of Part A and one bucket of Part B in a 25-gallon unit.)

Using a Jiffy type mixer, blend the Part C in until it is evenly dispersed, (about 1 - 2 minutes).

NOTE: Adding Part C darkens the color of SEMSTONE 245 somewhat.

3. Skip this step if you are spraying.

If mixing for application by hand:

Pour Part A into a clean mixing container of adequate capacity.

Add Part B.

Mix thoroughly for two minutes using a Jiffy type mixer.

The pot life of the mixed material will be about 15 minutes at 80°F. So, use immediately. For work on floors, etc., we suggest that you immediately dump the mixed material onto the surface and spread it.

NOTE: The premeasured quantities of each component have been carefully set. Any variation in these premeasured ratios will adversely effect performance. So, mix only complete units. If any of the components are spilled, discard the batch.

Material should be applied in even coats.

If spraying, use multidirectional passes to insure positive coverage and a proper film build.

If you notice a marbling or streaking effect while spraying, stop immediately. The spray equipment is not mixing the material properly or the mix ratios are incorrect. Check your equipment.

This marbled or streaked material will not cure properly and must be removed. Scrape the material off and then solvent wash the area with MEK or toluene. Alternately, abrasive blasting may be used to remove the material. In either case the end result is to have a non-sticky surface to recoat.

5. Adding aggregate:

a. Horizontal surfaces

To obtain a thicker coating and/or a nonskid finish, aggregate may be broadcast into the coating before it begins to set.

Since SEMSTONE 245 sets quickly, you must plan the work carefully. One worker should apply the coating, and another should follow immediately, broadcasting the aggregate. However, keep the work separated. Do not allow aggregate to be broadcast ahead of the applicator.

Broadcast aggregate until dry layer is achieved.

Allow the coating to cure.

Remove the excess aggregate.

Use only clean, dry, bagged and well graded 20/40 mesh silica or quartz sand containing not less than 97.5% silicon dioxide. Aggregate may be either round or angular.

When broadcasting aggregate in a large or congested area, it may be desirable for workers to wear spiked shoes to enable them to walk out onto the coating without disturbing it.

An optional topcoat of SEMSTONE 245 may be applied to protect the aggregate and obtain a more cleanable surface. The topcoat should be of neat material applied at a cover rate of 150 - 160 sq. ft. per gallon. The surface must be

kept dry and free of contamination prior to applying this topcoat.

b. Vertical surfaces

Refer to Sentry's supplemental guidelines for adding Part C and sand.

6. Prepare surfaces for intercoat adhesion as follows:

a. Allow SEMSTONE 245 to cure until jelled before recoating.

b. If the surface has cured firm to the touch, but less than 24 hours, it must be washed with soap and water, rinsed and dried before recoating.

c. Surfaces cured beyond 24 hours must be washed with soap and water, rinsed, dried and lightly sanded or abrasive blasted.

d. Important: While SEMSTONE 245 can be applied over damp concrete, for recoating, the surface must be dry.

7. Post-curing for immersion service in chlorinated solvents:

The coating must be postcured if it will be used for continuous immersion service in chlorinated solvents.

Tarp the coated area and heat it at 150°F for at least 12 hours.

8. Spark Testing Steel

Spark testing is recommended for coated steel in immersion service.

$$\text{Voltage setting} = 1250 \times \sqrt{\text{Coating Thickness (in mils)}}$$

9. If work is interrupted, and at the end of the day, terminate the coating in a straight line.

CLEANUP

Clean all tools and equipment with Xylene, MEK or toluene.

SAFETY PRECAUTIONS

FOR INDUSTRIAL USE ONLY.

Both the mixed product and its separate A and B components can be extremely irritating to skin, eyes and the respiratory system.

Avoid contact with eyes and skin; do not ingest or inhale.

When spraying in a confined area, wear a fresh air hood and make provision for forced ventilation.

At all other times, wear a NIOSH approved respirator suitable for organic vapors when working with this product or its components.

When working with SEMSTONE 245, always wear chemical goggles, rubber gloves, and appropriate work clothing.

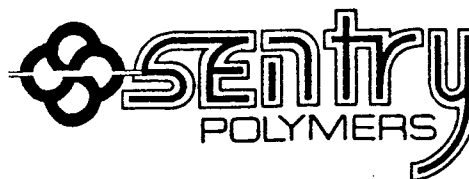
Prolonged or repeated exposure to the unreacted Part A and Part B components of SEMSTONE 245 may cause skin irritation or allergic reactions.

Refer to material safety data sheets regarding individual components.

NOTES:

NOTICE TO CUSTOMERS

We believe the information in this technical bulletin to be accurate; it is offered in good faith for your benefit. However, no guarantee of its accuracy is given or implied. Since the conditions of use are beyond our control, we suggest you make your own evaluation of these recommendations and suggestions. We guarantee our products to conform to our manufacturing standards. We assume no responsibility for coverage, performance or injuries resulting from use. Liability, if any, is limited to replacement of our products.



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●-SILOXIRANE®-C2033-●

**AMBIENT CURE PROTECTIVE LINING FOR CEMENT CONTAINMENT AREAS,
DIKES, FLOORS, PITS, ETC. HANDLING SOLVENTS, ACIDS, CAUSTICS**

DISCRIPTION

Siloxirane C-2033 is a two component ambient cure coating with outstanding corrosion resistance. It is a cross linked organic/inorganic thermoset polymer capable of resisting sulphuric acid, hydrochloric acid, nitric acid, glacial acetic acid, methylene chloride, methanol, acetone, caustics and hypochlorites.

APPLICATION

Siloxirane C-2033 can be applied by spray, brush or roller. For areas of heavy traffic, use Siloxirane C-2033 Non-Slip as the second coat.

Cure Time:	Foot traffic	12 hours
@ 75°F (24°C)	Vehicle traffic	24 hours
	Chemical service	72 hours

SUMMARY OF BENEFITS

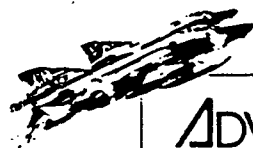
- Broad range of chemical resistance
- Steam cleanable
- Unique temperature span: -80°F to +200°F
- Non-absorbent
- Maintains a tough, hard surface
- Easily patched by maintenance personnel
- Outstanding abrasion wear resistance
- Excellent adhesion, even with flexing

AREAS OF USAGE

- Solvent containment pits and dikes
- Waste water pits
- Waste acid pits
- Acid troughs
- Oil and gasoline containment areas
- Gasohol containment areas
- Acid tank containment dikes
- Corrosion resistant flooring
- Tank coatings
- Coating of steel structures

TYPICAL PROPERTIES

- Finish Oyster White
Can be colored as required
- Weight per Gallon 11.0 lbs.
- V.O.C. Level 0.85 lbs. per gallon
96.0 grms per liter
- Lead Content Zero
- Kit Size 3 Gallons C2001 Resin
40.0 Ounces C2033 Catalyst
- Activator C2033 Catalyst
- Pot Life 120 minutes at 80°F and
50% rel. hum. (1 lb.)
45-60 minutes (3 gals.)
- Viscosity 300-500 Centistokes
- Flash Point 53°C
- Solids by Volume 87.4%
- Solids by Weight 94.0%
- Chromate Content Zero
- Theoretical 1360 sq. ft. per
Coverage gal. at 1 mil DFT
- Recommended DFT 18-20 mils dry
20-21 mils wet
- Shelf Life One year minimum when
stored at 50-90°F



ADVANCED
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Performance and Economical Excellence

PERFORMANCE

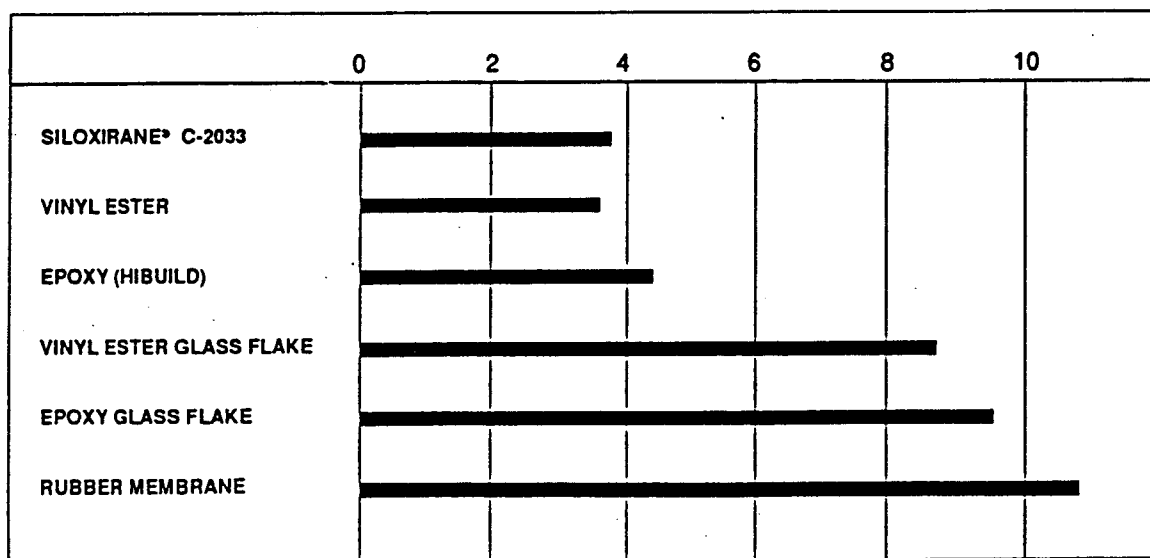
	Glacial Acetic Acid	Acetone	Ammonium Chloride	Ammonium Chloride	Benzene	Black Liquor (Paper)	Bromine Water	Carbon Tetrachloride	Chlorine Water	Chlorobenzene	Chromic Acid, 30%	Dichlorobenzene	Dimethylformamide	Ethanol	Formaldehyde	Furfural Alcohol	Gasoline	Hydraulic Oil	Hydrochloric Acid, 0.37%	Jet Fuel	Kerosene	Methanol	Methylene Chloride	MEK	MIBK	Monochloroacetic Acid	Nickel Plating	Nitric Acid, 50%	Sodium Chloride	Sodium Hydroxide	Sulfite Liquor (Paper), 17%	Sulfuric Acid, 0.70%	Sulfuric Acid, 70.98%	Toluene	Trichloroethylene	White Liquor (Paper)			
SILOXIRANE C-2033	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
VINYL ESTER	N	N	A	A	A	N	A	A	A	N	N	N	A	A	L	A	A	A	A	A	L	N	L	L	N	A	L	A	N	A	A	A	N	A	N	A	N	A	
EPOXY (HIBUILD)	N	N	A	A	N	A	N	N	N	A	N	N	A	A	N	A	L	A	N	A	N	N	N	N	N	N	A	N	A	L	N	A	A	N	A	N	A	N	A
RUBBER	L	N	A	A	N	A	N	N	A	N	A	-	N	L	N	N	N	L	A	L	L	N	N	N	N	N	-	A	A	A	N	A	A	A	N	N	L	L	

A = Good at ambient temperatures
L = Limited Service

N = Not recommended
- = No information

ECONOMY

Total Applied Cost per Square Foot



• Based on 4000 square foot area - 2 coat application on concrete surface.



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PHYSICAL PROPERTIES

• Tensile Strength (ASTM D638)	40°F 12,900 p.s.i. 75°F 11,340 p.s.i.	• Hardness	75-78 Barcol
• Flexural Strength	18,650 p.s.i.	• Permeability - Vapor Transmission of Water at 90°C for 7 Days	0.0000 gm per sq. ft. per 7 days per inch thickness
• Flexural Modulus (ASTM D790)	0.816 k.s.i.	• Impact Resistance (ASTM D2794)	37 in/lbs
• Elongation	-40°F 5.09% 75°F 4.38%	• U.V. Light Resistance (ASTM G53)	40+ years
• Water Absorption (30 days in ASTM D570) 88°C Water)	0.25%		

APPLICATION DATA

SURFACE PREPARATION

Sandblast with clear sand or grit to obtain an anchor pattern. All oils, soluble salts and loose concrete must be removed and the surface degreased. Concrete must have cured at least 30 days at 70°F.

MIXING INSTRUCTIONS

Material is supplied in two containers as a unit. Always mix a complete unit in the proportions supplied. (1) Thoroughly mix the contents of Part A with a power agitator until uniform consistency and color is obtained. Be sure that any solids that may have settled through storage have been put back in suspension. (2) Slowly combine the contents of the activator with the previously mixed Part A. (3) Thoroughly mix the two parts until a uniform consistency and color is obtained. (4) Use immediately due to short pot life.

LIMITATIONS

Apply in good weather when the air and surface temperatures are above 60°F. Surface temperatures must be at least 5° above the dew point. For optimum application properties, bring material to 70°-90°F prior to mixing and application. Increased temperatures will result in shorter pot life.

APPLICATION

Airless spray equipment with 30:1 pump ratio @ 80-100 lbs. to achieve 2400-3000 p.s.i. tip pressure. Reverse-A-Clean tip .019 to .023, with 3/8" fluid hose, 1/4" by 6" whip hose, with a maximum of 100 linear feet. This coating is a low VOC compliance material. If conditions require a viscosity adjustment, thin with MEK.

CLEAN UP SOLVENT

Acetone, MEK



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APPLICATION DATA (cont.)

CURE TIME AND TEMPERATURE

Curing at Ambient Temperatures

The temperature should be at 60°F or above. Lining will lose tackiness and become hard in 2 to 4 hours, depending on the prevailing temperature. Full curing will occur in 2 to 7 days, depending on temperature. Allow second coat to dry 24 hours before walking or driving on it.

COVERAGE

Theoretical at recommended film thickness - 75 sq. ft. per gallon

Practical at recommended film thickness - 60-65 sq. ft. per gallon

HANDLING PRECAUTIONS

Solvents and chemicals are contained in this product. Consult the Material Safety Data Sheet for details. Adequate safety and health precautions should be taken during handling, application and drying of this product. This material should be applied under local, state and federal regulations and in accordance with OSHA and ANSI bulletins on safety requirements.

PACKAGING

3 Gallon Kit consists of:

3 gallons C2001 Resin

40 oz. C2033 Catalyst

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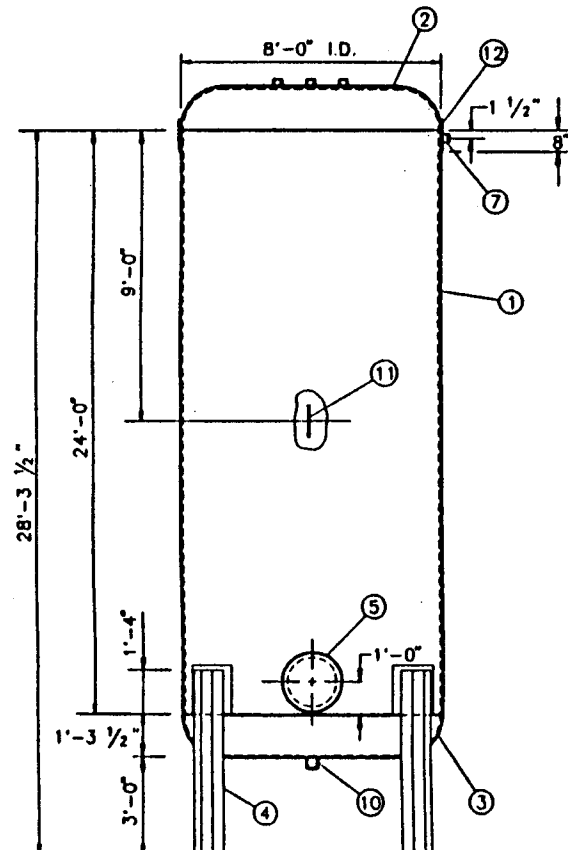
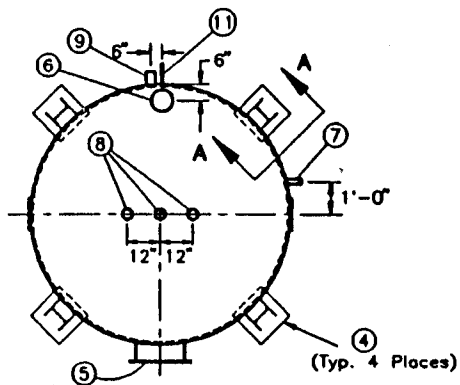
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Appendix E-B

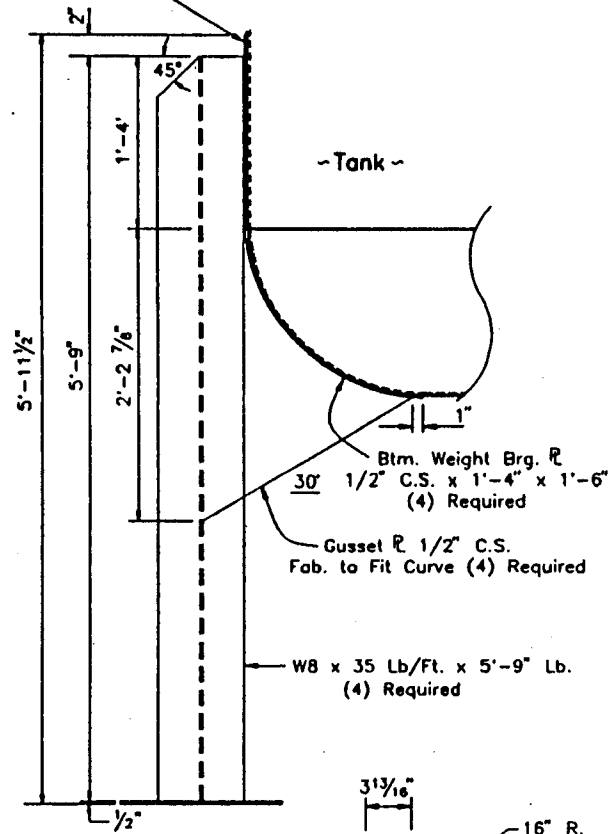
Tank Drawings

List of Drawings

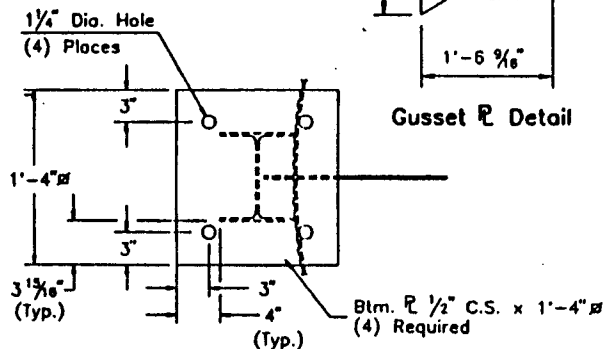
<u>Drawing Number</u>	<u>Tank Description</u>	<u>Tank Designation</u>
50-56-V1-001	Tank: 7,363 gallon Maximum Capacity	V-1, V-3, V-4, V-7, V-8
50-56-V2-001	Tank: 7,084 gallon Maximum Capacity	V-2
50-56-V5-001	Tank: 20,895 gallon Maximum Capacity	V-5, V-6
50-56-V9-001	Tank: 5,078 gallon Maximum Capacity	V-9, V-10, V-11, V-12, V-13, V-14
50-56-V15A-001	Tank: 2,659 gallon Maximum Capacity	V-15A
50-56-V15B-001	Tank: 2,659 gallon Maximum Capacity	V-15B, V-15C, V-15D
50-56-V16-001	Tank: 9,028 gallon Maximum Capacity	V-16
50-56-V17-001	Tank: 522 gallon Maximum Capacity	V-17
50-56-V26-001	Tank: 1,155 gallon Maximum Capacity	V-26



Side Weight Brg. $\frac{1}{2}$ " C.S. x
1'-4" x 1'-6" (4) Required

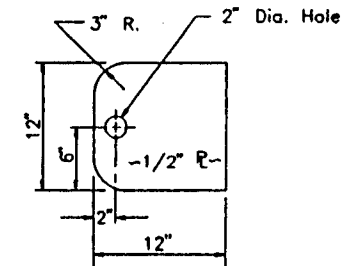


Section A - A

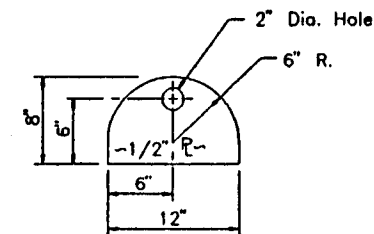


Specifications:

- 1.) Tank Btm. to be $\frac{1}{4}$ " C.S. & S.A.36
Sides to be $\frac{3}{16}$ " CSPL & S.A.36
Top to be $\frac{1}{4}$ " C.S. LP & S.A.36
- 2.) Primer w/1-coat Red Oxide &
Paint w/1-coat Tank White
- 3.) Tank to be Built per API 620,
Replacing API 620 Section #2
on Materials w/API 650 Appn. A
- 4.) PSIG Hydrotest
- 5.) PSIG Working Pressure



Top Crane Hook



Middle Crane Hook

12	2	Top Crane Hooks - See Detail
11	1	Middle Crane Hook - See Detail
10	1	3" 3000 Lb. 1/2 Cplg.
9	1	2 1/2" 3000 Lb. 1/2 Cplg.
8	3	2" 3000 Lb. 1/2 Cplg.
7	1	1" 3000 Lb. 1/2 Cplg.
6	1	Sentinal Mfg. Co. #56 8" Thief Hatch
5	1	Clay & Bailey #1820 18" Dia. Manhole
4	4	Leg Assembly - See Details
3	1	1/4" Bottom Head 8'-0" I.D. S.A. 36
2	1	1/4" Top Head 8'-0" I.D. S.A. 36
1	1	3/16" Shell 8'-0" I.D. S.A. 36 24'-0" Long

Item	Qty.	Description
------	------	-------------

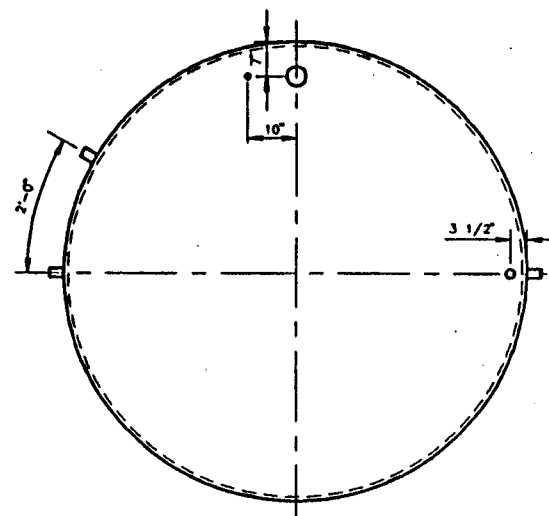
HYDROCARBON RECYCLERS, INC.

2549 N. NEW YORK AVE. WICHITA, KANSAS 67219

Scale: 3/8" = 1'-0" Date: 1-28-82 Drawn by: ProDraft

TANK: 7,363 GALLON MAXIMUM CAPACITY

V-1,V-3,V-4,V-7 & V-8 50-56-VI-001



8	1	4" Coupling
7	5	7" Coupling
6	1	1" Coupling
5	1	18" 150# RF
4	1	10" 150# RF
3	1	8" Thief Hatch
2	1	2' X 3' Manway
1	1	3/16" Shell 8'-0" O.D., S.A. 36, 18"-10" Long

2549 N. NEW YORK AVE. WICHITA, KANSAS 67219

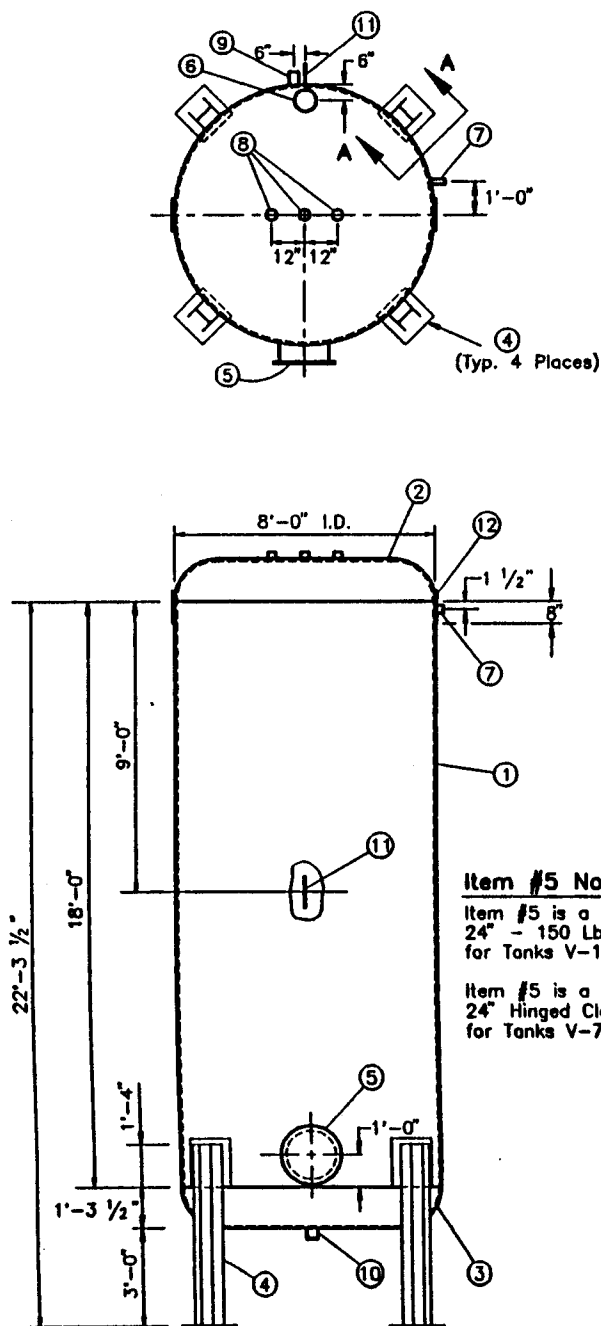
Date: 1-22-92

Drawn by: ProDraft

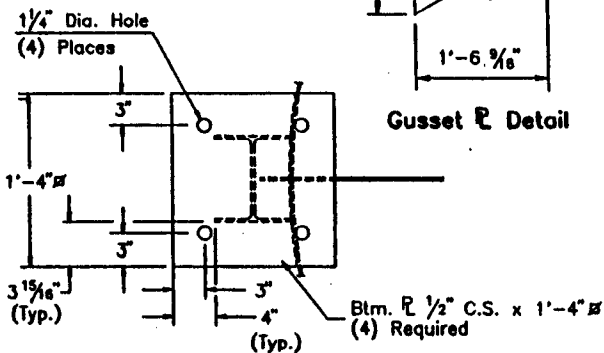
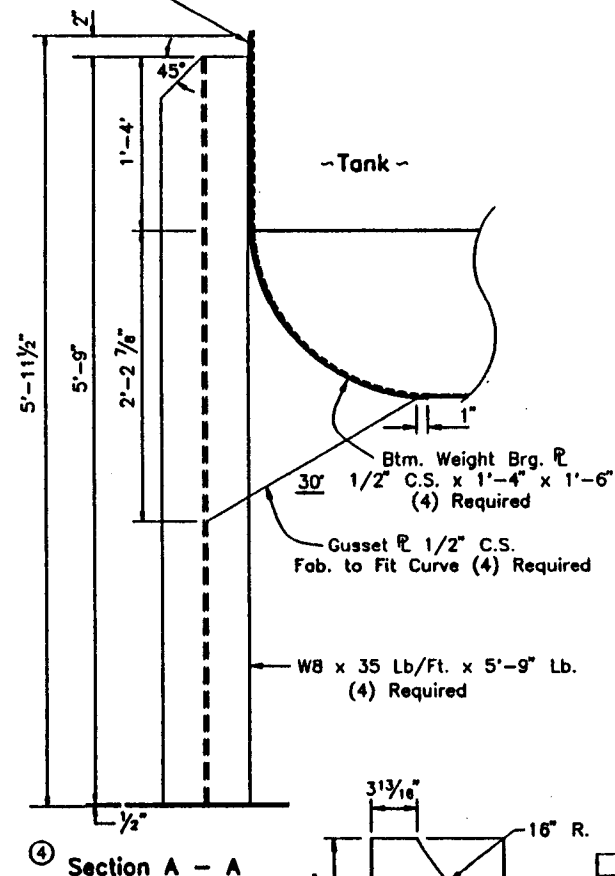
TANK: 7,084 GALLON MAXIMUM CAPACITY

V-2

50-56-V2-001

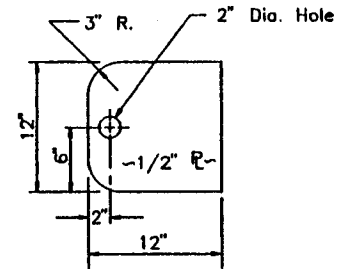


Side Weight Brg. $\frac{1}{2}$ " C.S. x
1'-4" x 1'-6" (4) Required

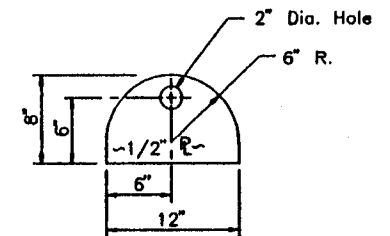


Specifications:

- 1.) Tank Btm. to be $\frac{1}{4}$ " C.S. & S.A.36
Sides to be $\frac{3}{16}$ " C.S.P.L. & S.A.36
Top to be $\frac{1}{4}$ " C.S. L.P. & S.A.36
- 2.) Primer w/1-coat Red Oxide &
Paint w/1-coat Tank White
- 3.) Tank to be Built per API 620,
Replacing API 620 Section #2
on Materials w/API 650 Appn. A
- 4.) PSIG Hydrotest
- 5.) PSIG Working Pressure



12 Top Crane Hook



11 Middle Crane Hook

Item #5 Note:

Item #5 is a
24" - 150 Lb. RF Flange
for Tanks V-1, V-3 & V-4.

Item #5 is a
24" Hinged Closure
for Tanks V-7 & V-8.

Item	Qty.	Description
12	2	Top Crane Hooks - See Detail
11	1	Middle Crane Hook - See Detail
10	1	3" 3000 Lb. 1/2 Cplg.
9	1	2 1/2" 3000 Lb. 1/2 Cplg.
8	3	2" 3000 Lb. 1/2 Cplg.
7	1	1" 3000 Lb. 1/2 Cplg.
6	1	Sentinel Mfg. Co. #56 8" Thief Hatch
5	1	See Item #5 Note
4	4	Leg Assembly - See Details
3	1	1/4" Bottom Head 8'-0" I.D. S.A. 36
2	1	1/4" Top Head 8'-0" I.D. S.A. 36
1	1	3/16" Shell 8'-0" I.D. S.A. 36 24'-0" Long

HYDROCARBON RECYCLERS, INC.

2549 N. NEW YORK AVE. WICHITA, KANSAS 67219

Scale: 3/8" = 1'-0"

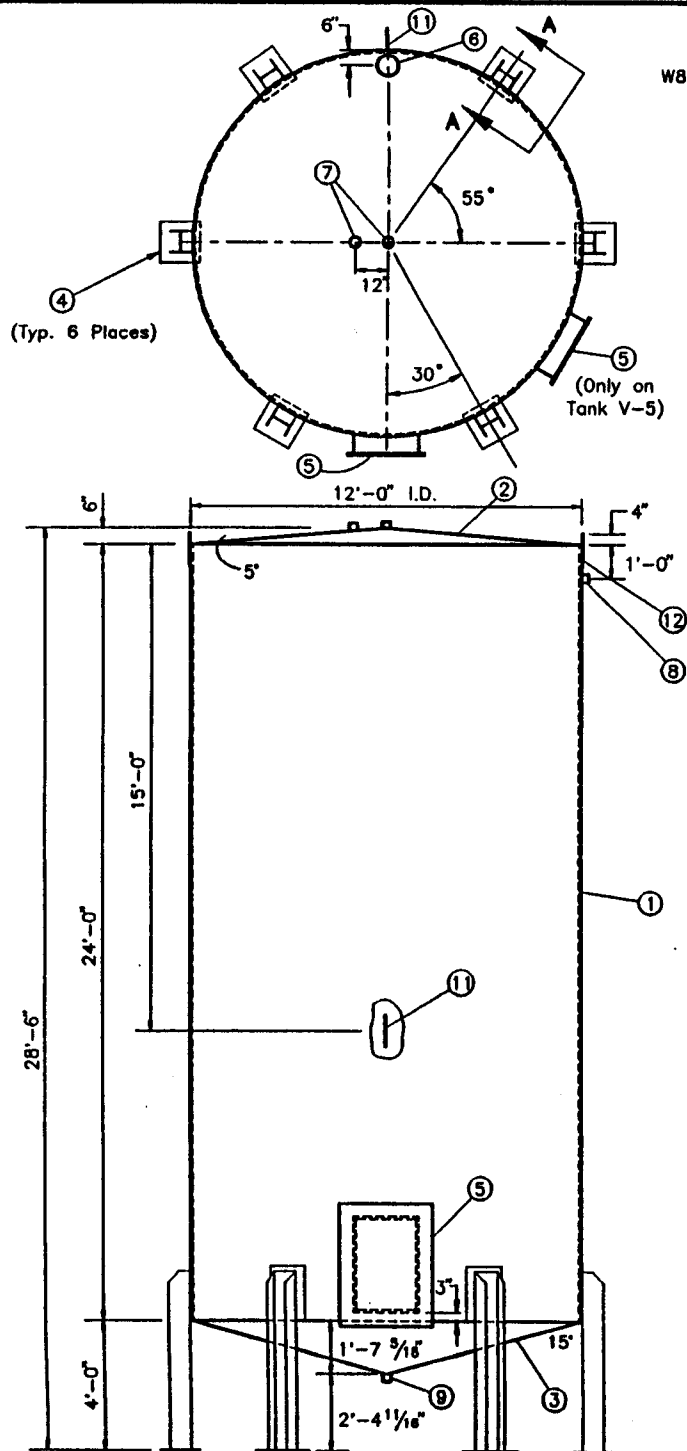
Date: 7-1-82

Drawn by: ProDrett

TANK: 7,383 GALLON MAXIMUM CAPACITY

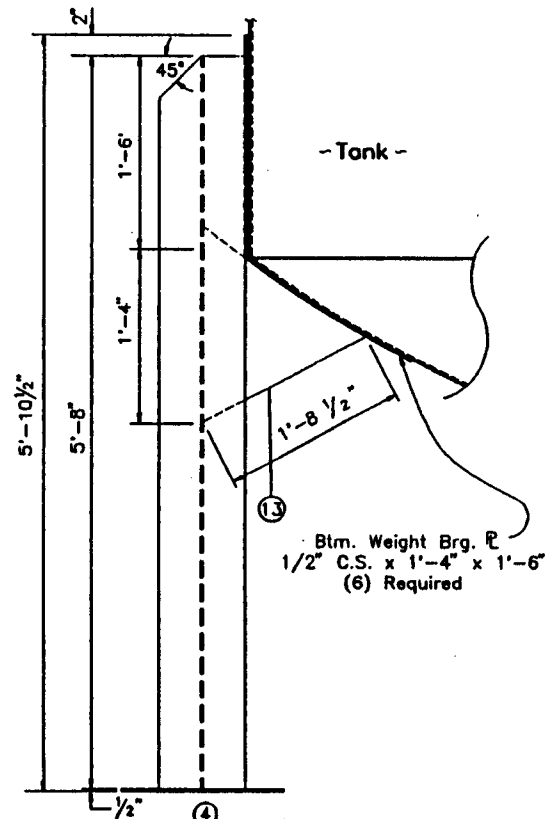
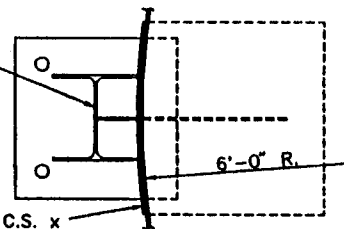
V-1, V-3, V-4, V-7 & V-8

50-56-VI-001

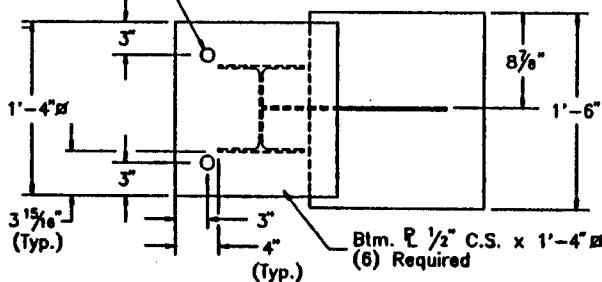


W8 x 35 Lb/Ft. x 5'-8" Lb.
(6) Required

Side Weight Brg. $\frac{1}{2}$ " C.S. x
1'-4" x 1'-8" (6) Required

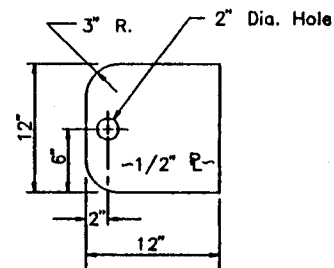


1/4" Dia. Hole
(2) Places

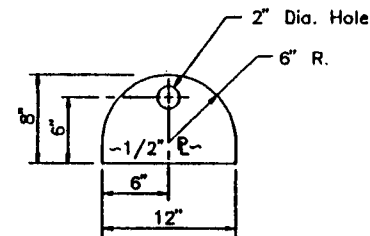


Specifications:

- 1.) Tank Blm. to be 5/16" C.S. & A36
Sides to be 1/4" C.S. $\frac{1}{2}$ " & A36
Top to be 3/16" C.S. $\frac{1}{2}$ " & A36
- 2.) Primer w/1-coat Red Oxide &
Paint w/1-coat Tank White
- 3.) Tank to be Built per API 620,
Replacing API 620 Section #2
on Materials w/API 650 Appn. A



12 Top Crane Hook



11 Middle Crane Hook

*2 Manways required on Tank V-5

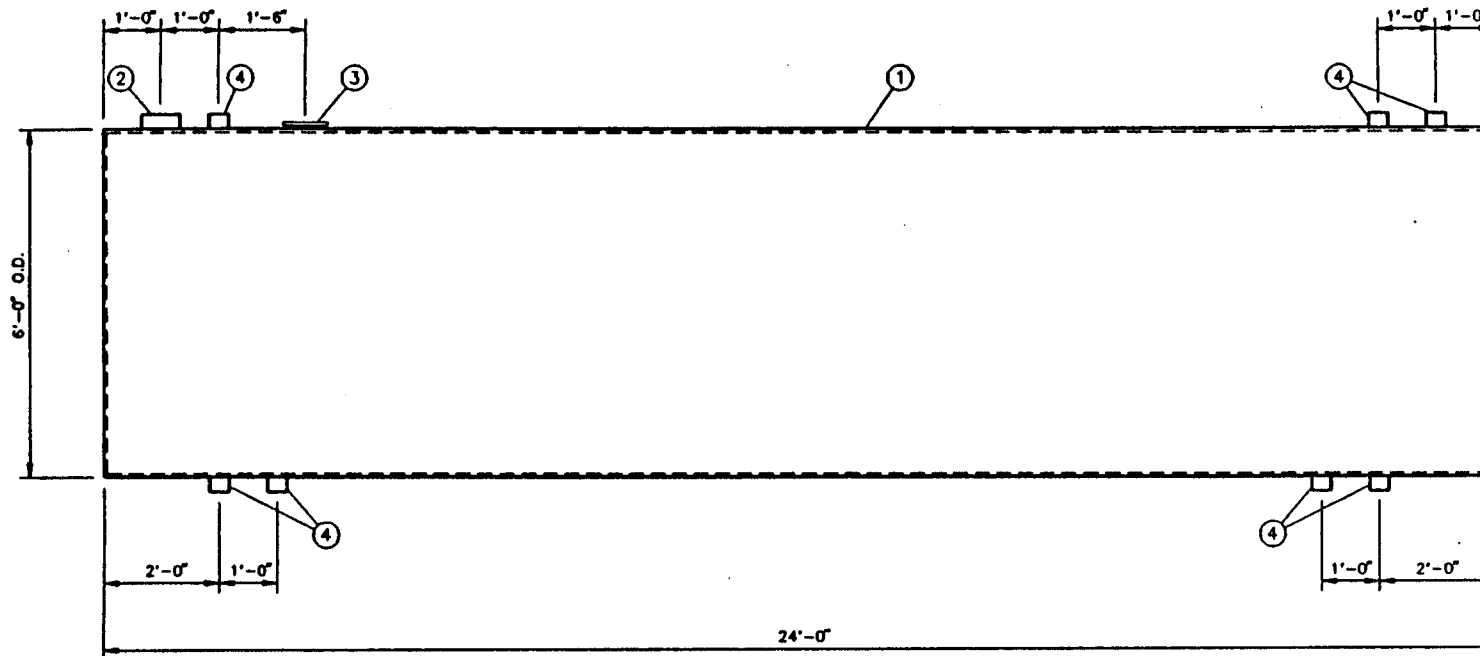
Item	Qty.	Description
13	6	Gusset $\frac{1}{2}$ " C.S. 1'-4" x 1'-4" x 1'-8 1/2"
12	2	Top Crane Hooks - See Detail
11	1	Middle Crane Hook - See Detail
10	1	3" 3000 Lb. Full Cplg.
9	1	4" 3000 Lb. 1/2 Cplg.
8	1	3" 3000 Lb. 1/2 Cplg.
7	2	2" 3000 Lb. 1/2 Cplg.
6	1	Clay & Bailey #54 8" Thief Hatch
5	1 (2)	3'-0" X 2'-0" Std. Manway w/Cover
4	6	Leg Assembly - See Details
3	1	5/16" Bottom Head 12'-0" I.D. A. 36
2	1	3/16" Top Head 12'-0" I.D. A. 36
1	1	1/4" Shell 12'-0" I.D. A. 36 24'-0" Long

HYDROCARBON RECYCLERS, INC.
2548 N. NEW YORK AVE. WICHITA, KANSAS 67219

Scale: 3/8" = 1'-0"
Date: 7-7-83
Drawn by: Probert

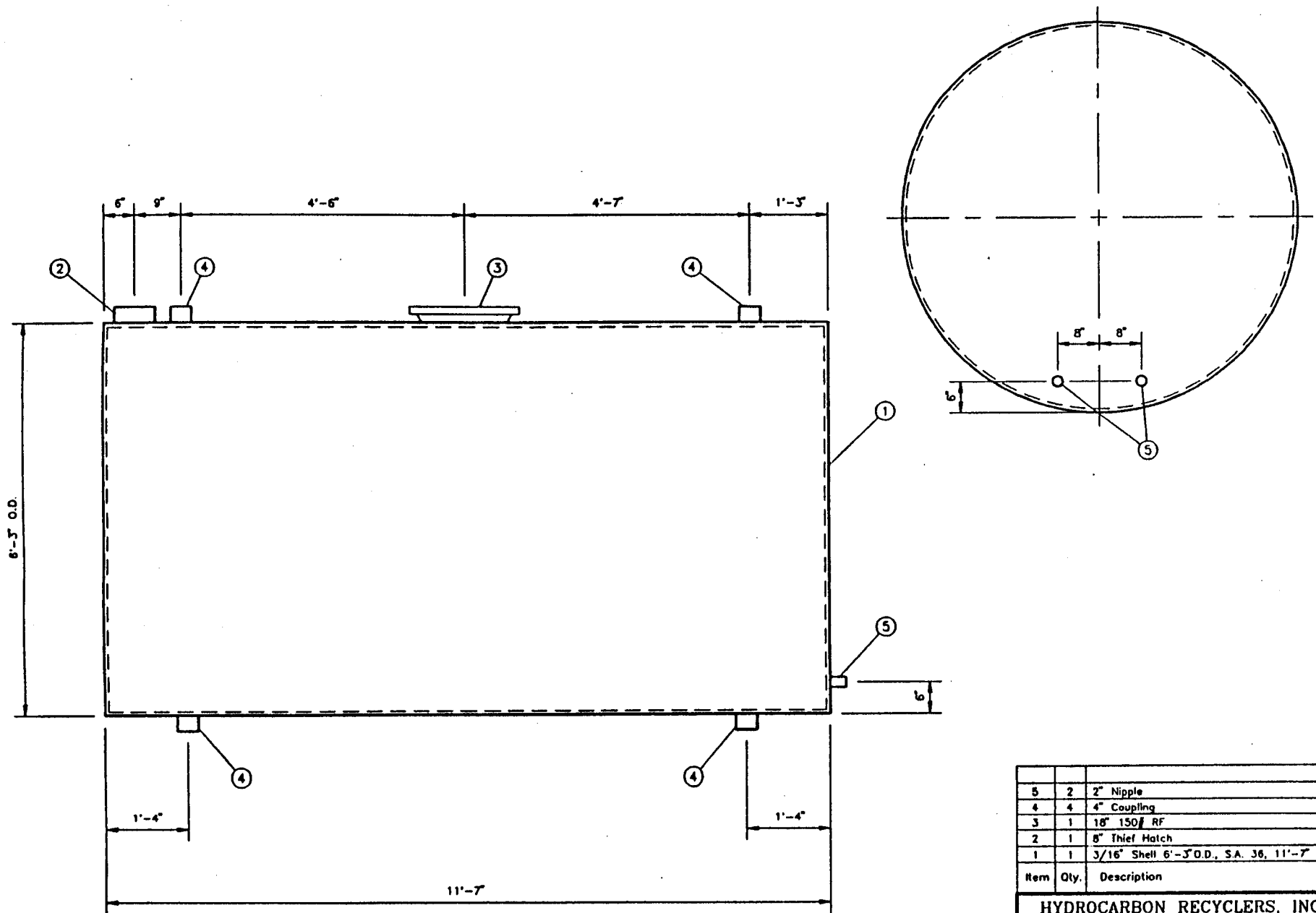
TANK: 20,895 GALLON MAXIMUM CAPACITY

V-5 & V-6 50-36-VS-001



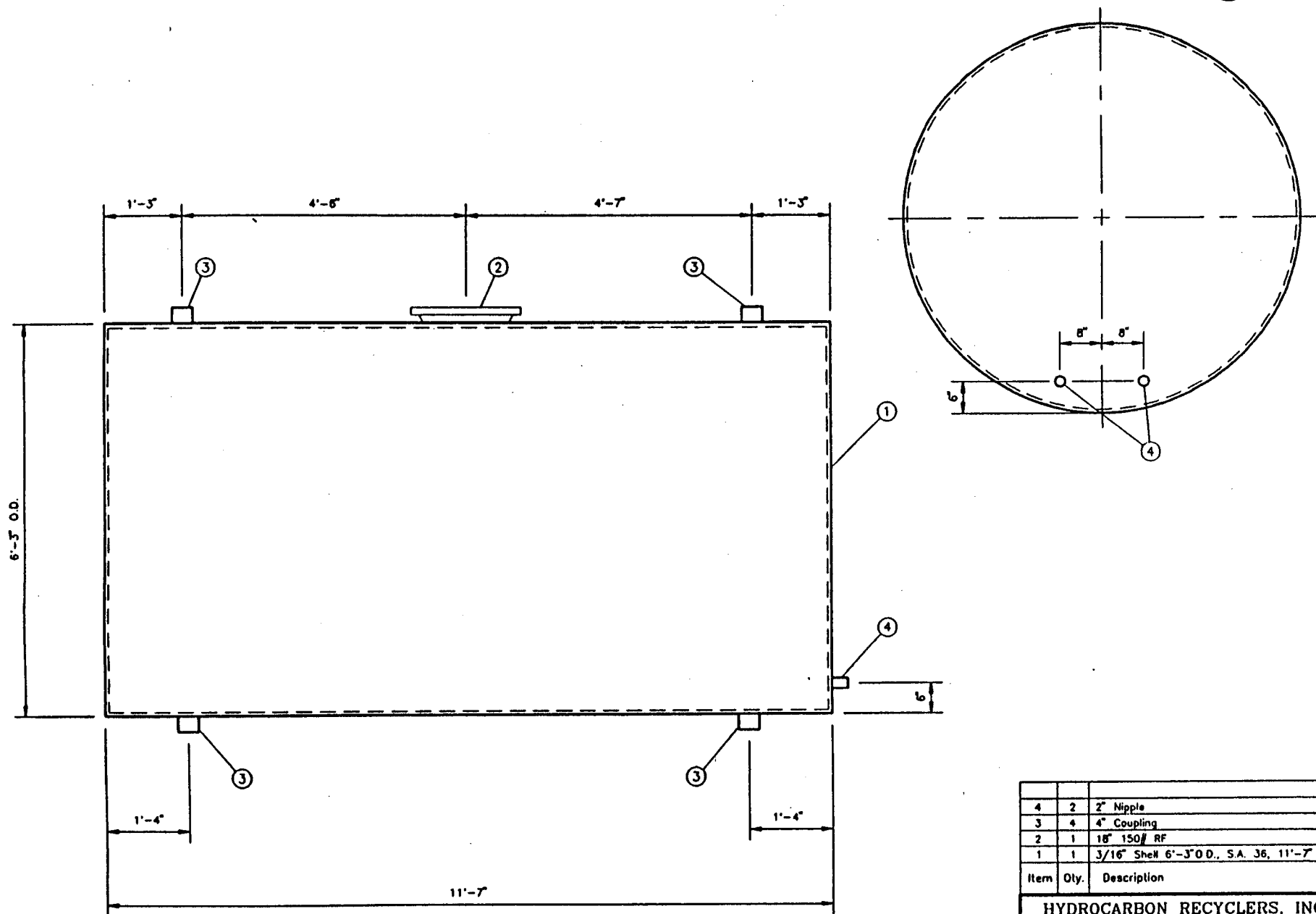
U.L. Numbers	
V-9	98448
V-10	98447
V-11	98444
V-12	98446
V-13	104275
V-14	98445

4	7	4" Coupling
3	1	6" 150# RF
2	1	6" Thief Hatch
1	1	3/16" Shell 6'-0" O.D., S.A. 36, 24' Long
Item	Qty.	Description
HYDROCARBON RECYCLERS, INC.		
2549 N. NEW YORK AVE. WICHITA, KANSAS 67219		
Scale: 1 1/2" = 1'-0"		
Date: 1-22-92		Drawn by: ProDraft
TANK: 5,078 GALLON MAXIMUM CAPACITY		
V-9 THRU V-14		50-56-V9-001



5	2	2" Nipple
4	4	4" Coupling
3	1	18" 150# RF
2	1	8" Thief Hatch
1	1	3/16" Shell 6'-3" O.D., S.A. 36, 11'-7" Long
Item	Qty.	Description

HYDROCARBON RECYCLERS, INC.		
2549 N. NEW YORK AVE. WICHITA, KANSAS 67219		
Scale: 1" = 1'-0"		Drawn by: ProDraft
Date: 1-22-92		
TANK: 2,659 GALLON MAXIMUM CAPACITY		
V-15-A		50-56-V15A-001



4	2	2" Nipple
3	4	4" Coupling
2	1	18" 150# RF
1	1	3/16" Shell 6'-3" O.D., S.A. 36, 11'-7" Long
Item	Qty.	Description
HYDROCARBON RECYCLERS, INC.		
2549 N. NEW YORK AVE. WICHITA, KANSAS 67219		
Scale: 1" = 1'-0"		Drawn by: ProDraft
Date: 1-22-82		
TANK: 2,659 GALLON MAXIMUM CAPACITY		
V-15-B,C,D		50-56-V15B-001

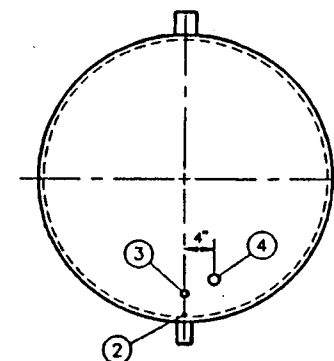
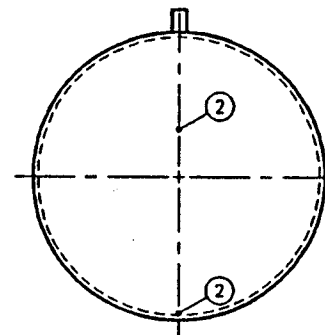
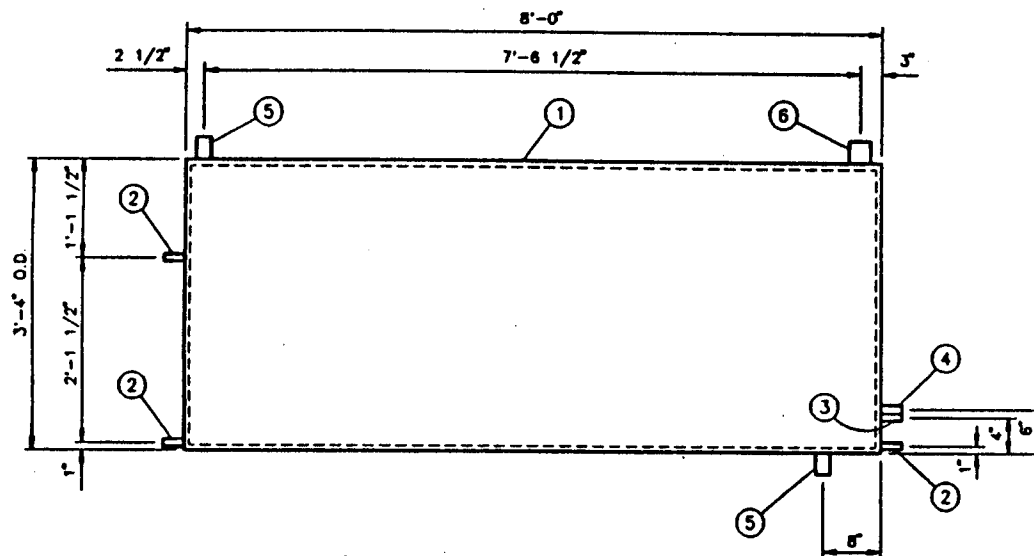
4	7	4" Coupling
3	1	18" 150# RF
2	1	6" Thief Hatch
1	1	3/16" Shell 8'-0" O.D., S.A. 36, 24' Long
Item	Qty.	Description

HYDROCARBON RECYCLERS, INC.
 2549 N. NEW YORK AVE. WICHITA, KANSAS 67219

Scale: 1 1/2" = 1'-0"	
Date: 1-22-82	
Drawn by: ProDraft	

TANK: 9,028 GALLON MAXIMUM CAPACITY

V-18	50-56-V16-001
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Item	Qty.	Description
9	2	9" x 16" x 3/8" Plate
8	4	3" X 3" Angle
7	4	3" X 3" Angle, 6'-6" Long
6	1	3" Nipple
5	2	2" Coupling
4	1	1 1/2" Coupling
3	1	1" Coupling
2	3	1/2" Coupling
1	1	3/16" Shell 3'-4" O.D., S.A. 36, 8'-0" Long

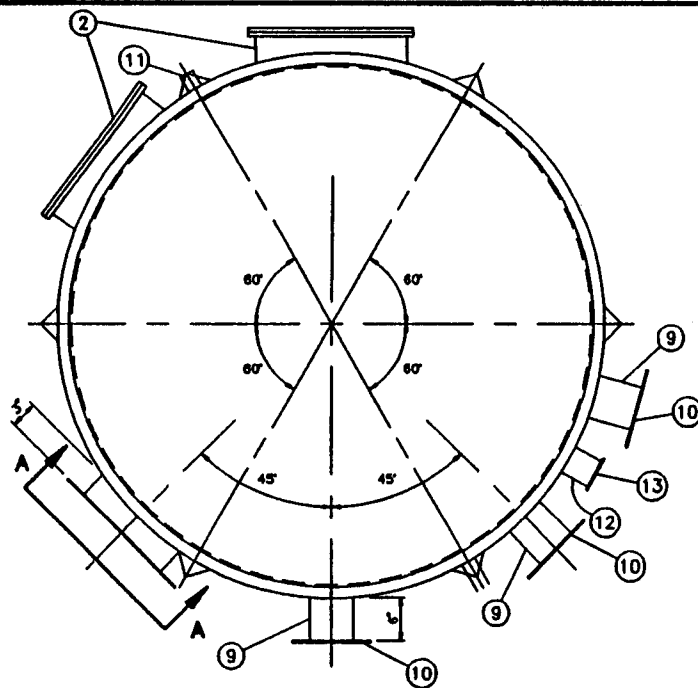
Item	Qty.	Description
------	------	-------------

HYDROCARBON RECYCLERS, INC.
2549 N. NEW YORK AVE. WICHITA, KANSAS 67219

Scale: 1" = 1'-0"
Date: 1-22-92
Drawn by: ProDraft

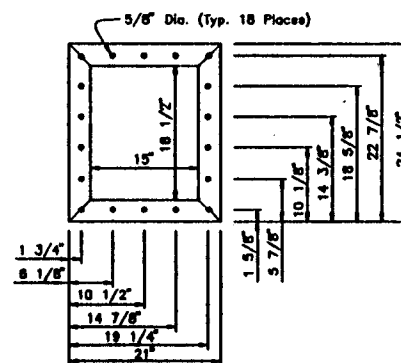
TANK: 522 GALLON MAXIMUM CAPACITY

V-17
50-56-V17-001

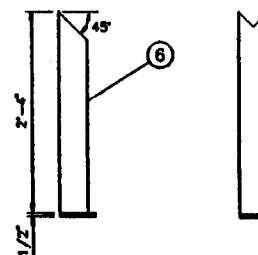
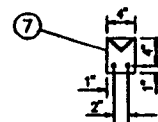
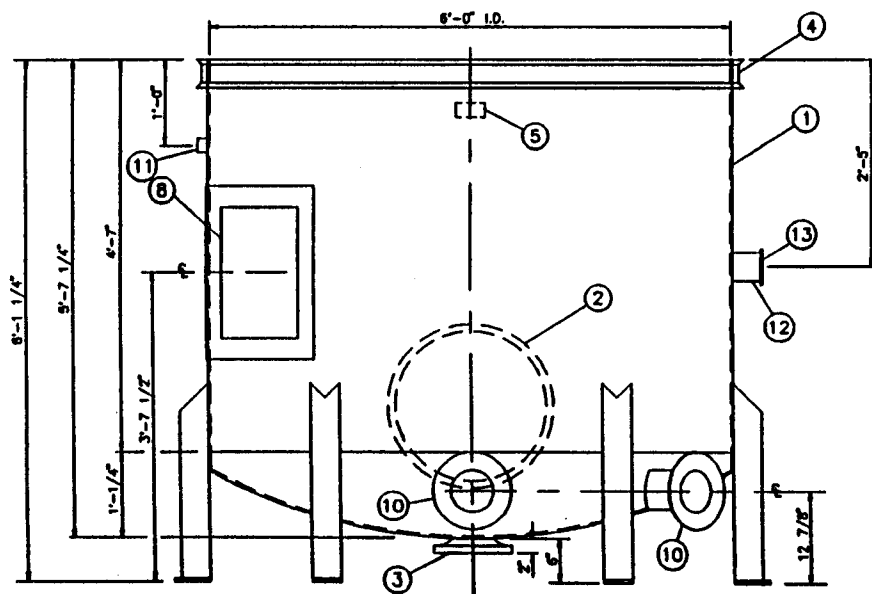


Specifications:

- 1.) Tank Head and Shell to be 5/16" C.S. L SA-36.
- 2.) Tank to be Built per API 620 and replace API 620 Sec. 2 on Materials with API 650 Appendix A
- 3.) Primer w/1-coat Red Oxide Primer.



Section A-A



Leg Assembly

Typ. 6 Places

13	1	4" 150 Lb. RF
12	1	4" Pipe
11	1	2" 1/2 Cplg.
10	3	6" 150 Lb. RF50
9	3	6" Schedule 40 Pipe
8	1	5" x 3" x 1/4" Angle Section A-A
7	6	4" x 4" x 1/2" L
6	6	3" x 3" x 1/4" Angle 28" Long
5	1	API Name Plate
4	1	C4x5 4 Lbs.
3	1	6" 150 Lb. RFWN
2	2	Chandler Part No. 1010 21" Manway
1	1	5/16" Shell 6'-0" I.D. S.A. 36 4'-3" Long
Item	Qty.	Description

HYDROCARBON RECYCLERS, INC.
2548 N. NEW YORK AVE. WICHITA, KANSAS 67219

Scale: 1" = 1'-0" Designed by:
Date: 7-7-82 Drawn by: ProDraft

TANK: 1,155 GALLON MAXIMUM CAPACITY

Clean Harbors Kansas, LLC

RCRA Permit Application

Section E

Tank Systems

Appendix E-C - Documentation of Tank Ages

Appendix E-C

Documentation of Tank Ages

August 14, 1998
Revision No. 8

Clean Harbors Kansas, LLC

RCRA Permit Application

Section E

Tank Systems

Appendix E-C - Documentation of Tank Ages

APPENDIX E-C

YEAR OF INSTALLATION OF HAZARDOUS WASTE TANKS

<u>VESSEL</u>	<u>YEAR INSTALLED</u>	<u>VESSEL</u>	<u>YEAR INSTALLED</u>
V-1	1988	V-12	1966
V-2	1982	V-13	1966 ¹
V-3	1988	V-14	1966
V-4	1988	V-15A	1966
V-5	1988	V-15B	1966
V-6	1988	V-15C	1966
V-7	1988	V-15D	1966
V-8	1988	V-16	1966
V-9	1966	V-17	1990
V-10	1966		
V-11	1966	V-26	1991

¹ Note: Tank V-13 was closed in place in September, 1996. It is anticipated that a replacement tank will be installed in the future.

August 14, 1998
Revision No. 8

**Clean Harbors Kansas, LLC
2549 North New York Avenue
Wichita, Kansas 67219
Telephone: 316/269-7400 Fax: 316/269-7455**

**Clean Harbors Kansas, LLC
RCRA Permit Application
Parts A & B**

Volume 2 of 3

**Submitted To:
State of Kansas Department of Health and Environment
and
United States Environmental Protection Agency – Region VII**

February 18, 1992
Revised: August 14, 1998

**Clean Harbors Kansas, LLC
2549 North New York Avenue
Wichita, Kansas 67219
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Fax: 316/269-7455**

**Clean Harbors Kansas, LLC
RCRA Permit Application
Parts A & B**

Volume 2 of 3

**February 18, 1992 /
Revised: August 14, 1998**

**Clean Harbors Kansas, LLC
2549 North New York Avenue
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Telephone: 316/269-7400 Fax: 316/269-7455**

**Clean Harbors Kansas, LLC
RCRA Permit Application
Parts A & B**

Volume 2 of 3

**Submitted To:
State of Kansas Department of Health and Environment
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United States Environmental Protection Agency – Region VII**

February 18, 1992
Revised: August 14, 1998

Clean Harbors Kansas, LLC
RCRA Permit Application
Section F
Inspection Plan

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F-2 <u>Inspection Requirements:</u>	Page 4
F-2a <u>General Inspection Requirements:</u>	Page 4
F-2b <u>Specific Process Inspection Requirements:</u>	Page 5
F-2b(1) <u>Container/ Container Management Unit</u> <u>Inspection:</u>	Page 6
F-1b(2) <u>Tank and Tank Systems Inspection:</u>	Page 7
F-2b(3) <u>Miscellaneous Units:</u>	Page 9
F-2b(4) <u>RCRA Air Emissions Monitoring:</u>	Page 10
F-3 <u>Inspection Schedule:</u>	Page 11

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RCRA Permit Application
Section F
Inspection Plan

List of Appendices

Appendix F-A, Example of Inspection Log
Appendix F-B, Example of Remedial Work Order
Appendix F-C, General Inspection Schedule
Appendix F-D, Inspection Schedule for Containers
Appendix F-E, Inspection Schedule for Tank Systems
Appendix F-F, Inspection Schedule for Miscellaneous Units
Appendix F-G, Inspection Schedule for RCRA Air Emissions
Monitoring

Acronym Table

Clean Harbors Kansas, LLC (CHK)
Remedial Work Order (RWO)
Emergency Response Coordinator (ERC)
Container Management Unit (CMU)

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RCRA Permit Application
Section F
Inspection Plan

F-1 Introduction:

Clean Harbors Kansas, LLC (CHK) has developed this Inspection Plan in compliance with 40 CFR 264.15 and 270.14; changes to the inspection plan will be made in accordance with permit modification procedures found in 40 CFR 270.42. It is intended to provide a systematic method of identifying potential problems, malfunctions, or deterioration which may cause or lead to a release of hazardous constituents to the environment or a threat to human health. Inspections will be used to identify potential operational problems, and to identify required maintenance of in-service equipment and structures while the facility is operational or equipment is in service. The corrective program will include a Remedial Work Order (RWO) system to document and track the resolution of problems identified during inspections.

One or more inspectors will be designated to perform the inspections as scheduled. A record of the inspections and the schedule will be maintained at the facility. The results of the inspections will be recorded on an Inspection Log which will be maintained in the operating record. The Inspection Log will include the date, the time of the inspection, the name of the inspector, his/her initials, items examined, problems noted, and

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Inspection Plan

the identifying number of each RWO issued to address any problem noted. The nature and date of any repairs are recorded on the RWO when the repairs are completed. The RWO is then filed by identifying number in the operating record.

Potential problems identified on the inspection log will be corrected or addressed as soon as possible or practicable. If repairs are required, they will be made as soon as they can be safely and practically performed. If the problem identified is a threat to human health or the environment, then actions to mitigate the situation will be undertaken immediately. All steps necessary to allow the repairs (e.g., minimizing the exposure of the workers to hazardous materials, hazardous waste, or hazardous situations) will be taken prior to beginning the repair work. The inspection logs and RWOs will be maintained as part of the operating record for at least three years from the date of inspection. Examples of the inspection log are provided in Appendix F-A, Example of Inspection Log, and an example of the RWO is provided in Appendix F-B, Example of Remedial Work Order.

The facility inspector will communicate the occurrence of problems to the Operations Manager (or designee) through the RWOs. The timing of this notification will depend on the nature of the potential problem. A problem threatening human health or

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Section F
Inspection Plan

the environment would be reported immediately. If necessary, the inspector will notify the Emergency Response Coordinator (ERC) as required by Section H, Contingency/Emergency Plan.

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Clean Harbors Kansas, LLC
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Section F
Inspection Plan

F-2 Inspection Requirements:

F-2a General Inspection Requirements: 40 CFR 264.15(a) and (b),
264.33, 270.14(b) (5)

Appendix F-C, General Inspection Schedule, will include inspection of the facility perimeter, safety and emergency equipment, security devices, operating and structural equipment, general requirements of miscellaneous units, communication systems, alarm systems, fire protection equipment, and decontamination equipment.

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Inspection Plan

F-2b Specific Process Inspection Requirements: 40 CFR
 264.15(b) (4), 270.14(b) (5)

Specific inspection schedules for container, tank systems, and miscellaneous units are provided in Appendix F-D, Inspection Schedule for Containers, Appendix F-E, Inspection Schedule for Tank Systems, and Appendix F-F, Inspection Schedule for Miscellaneous Units.

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RCRA Permit Application
Section F
Inspection Plan

F-2b(1) Container/ Container Management Unit Inspection:
40 CFR 264.174

The Container Management Unit (CMU)s will be inspected for adequate aisle space, potential spills or accumulation of liquids into secondary containment systems and loading or unloading areas, and deterioration of secondary containment area structures.

The containers will be visually inspected in accordance with Section C, Waste Characterization, for their condition (e.g., open, deteriorated, damaged, corroded, leaking, bulging such as may be caused by internal pressure build-up, etc.), and identification markings.

Refer to Section D, Use and Management of Containers, for a description of the CMUs. The inspection schedule for containers and container management units at the facility is presented in Appendix F-D, Inspection Schedule for Containers.

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Clean Harbors Kansas, LLC
RCRA Permit Application
Section F
Inspection Plan

F-1b(2) Tank and Tank Systems Inspection: 40 CFR 264.193(i),
264.195

The items addressed by tank systems inspections include tanks, ancillary equipment, secondary containment systems, areas surrounding tank systems, tank overfilling control equipment, and other control or monitoring equipment. For example:

- . The visible portions of the construction material of the tanks and their ancillary systems will be inspected for evidence of corrosion, deterioration, or erosion which could result in a leaking or unfit-for-use tank or tank system.
- . The area immediately surrounding all tank systems including areas within the secondary containment systems will be inspected for obvious signs of deterioration, accumulated liquids, or potential releases of hazardous waste.
- . Loading and unloading areas are inspected for obvious signs of deterioration, accumulated liquids, or potential releases of hazardous waste.

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. Tank overfilling control and monitoring equipment is inspected visually or (periodically) for mechanical operation.

. The leak detection systems for the tanks are inspected for evidence of leakage, deterioration, or malfunction.

A list of the tanks and a description of the tank systems is provided in Section E, Tank Systems. Each of the tanks listed in Section E will be inspected for the applicable items listed above, according to Appendix F-E, Inspection Schedule for Tank Systems. Tank condition is assessed annually.

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Clean Harbors Kansas, LLC
RCRA Permit Application
Section F
Inspection Plan

F-2b(3) Miscellaneous Units: 40 CFR 264.602

Inspection requirements for miscellaneous units include checks for releases, deterioration, or malfunction of each unit, and, as applicable, the unit's controls to prevent releases to the environment. These units are described in Section M, Other Regulated Units. Specific inspection items are addressed in Appendix F-F, Inspection Schedule for Miscellaneous Units.

Inspections with respect to miscellaneous units will follow the same procedures as all other regulated units. The inspections will identify potential operational problems and required maintenance of in-service equipment and structures while the facility is operational or equipment is in service. The corrective program will include a Remedial Work Order (RWO) type of system to document and track the resolution of problems identified during inspections.

December 20, 1995
Revision No. 8

Clean Harbors Kansas, LLC
RCRA Permit Application
Section F
Inspection Plan

F-2b(4) RCRA Air Emissions Monitoring: 40 CFR 264, Subparts AA
and BB

CHK currently operates no units subject to the Subpart AA requirements. Air emissions monitoring requirements for Subpart BB are discussed in Section N, Air Emissions. Inspections required under Subpart BB are addressed in Appendix F-G, Inspection Schedule for RCRA Air Emissions Monitoring.

December 20, 1995
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Clean Harbors Kansas, LLC
RCRA Permit Application
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Inspection Plan

F-3 Inspection Schedule: 40 CFR 264.15, 270.14 (b) (5)

The inspection schedules presented in Appendices F-C through F-G indicate the inspection frequency for each item on the schedule. Inspection frequencies may range from daily to annually, depending upon the item. The frequencies have been based on the rate of probable deterioration of equipment, equipment manufacturers' recommendations, and operating experience at other Clean Harbors facilities. For example, areas within the facility subject to spills, such as truck loading and unloading areas, will be inspected daily when in use.

December 20, 1995
Revision No. 8

Clean Harbors Kansas, LLC
RCRA Permit Application
Section F - Inspection Plan
Appendix F-A - Sample Inspection Log

APPENDIX F-A

SAMPLE INSPECTION LOG

August 14, 1998
Revision No. 2

**CLEAN HARBORS KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE DAY OF : _____, _____, _____

TIME: _____

INSPECTION UNIT	PERIMETER AND YARDS		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Facility Gates	Check: should be locked, and warning signs present and visible.	A / U	
Access Roads	Check for facility debris, deterioration, and spills.	A / U	
Perimeter and Yards	Check for contaminated pallets, hoses, equipment or debris, or evidence of spills.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

**CLEAN HARBORS KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE DAY OF : _____, _____, _____

TIME: _____

INSPECTION UNIT	BUILDING D:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Storage	Two foot minimum aisle space between piles of drums.	A / U	
	Loading/unloading areas: check for evidence of spills or accumulated liquids.	A / U	
	Sump: Check for accumulation of liquid, contaminants, or deterioration.	A / U	
Containment area: Inside Tank Room	Cracks or general deterioration of the concrete.	A / U	
	Floor coating integrity: Check for cracks, gaps, flaking, chips, gouges, or other signs of wear or leaking.	A / U	
	Sump: Check for accumulations of liquid, contaminants, or deterioration.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

**CLEAN HARBORS KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE DAY OF : _____, _____, _____

TIME: _____

INSPECTION UNIT: D BUILDING, TANKS & MISCELLANEOUS UNITS		E L E M E N T S T A T U S					
INSPECTION ITEM:	Leaks, Deteri- oration, Cor- rosion	Foundation Integrity	Piping Integrity	Protective Coating	Lid/Cap Closed	Pressure Re- lief Hatch (where appl)	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
V - 9	A / U	A / U	A / U	A / U	A / U	A / U	
V - 10	A / U	A / U	A / U	A / U	A / U	A / U	
V - 11	A / U	A / U	A / U	A / U	A / U	A / U	
V - 12	A / U	A / U	A / U	A / U	A / U	A / U	
V - 13	A / U	A / U	A / U	A / U	A / U	A / U	
V - 14	A / U	A / U	A / U	A / U	A / U	A / U	
V - 15A	A / U	A / U	A / U	A / U	A / U	A / U	
V - 15B	A / U	A / U	A / U	A / U	A / U	A / U	
V - 15C	A / U	A / U	A / U	A / U	A / U	A / U	
V - 15D	A / U	A / U	A / U	A / U	A / U	A / U	
V - 16	A / U	A / U	A / U	A / U	A / U	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

**CLEAN HARBORS KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE DAY OF : _____, _____, _____

TIME: _____

INSPECTION UNIT	PROCESSING AREA:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Storage, Ignitable Storage, Containment	Two foot minimum aisle space between piles of drums.	A / U	
	Loading/unloading areas: check for evidence of spills or accumulated liquids.	A / U	
	Cracks or general deterioration of the concrete.	A / U	
	Coating integrity: check for cracks, gaps, flaking, chips, gouges, or other signs of wear.	A / U	
	Check for fire prevention: no smoking, use of non sparking tools, proper use of Hot Work Permits as needed.	A / U	
	Sump and Containment: Check for accumulations of stormwater, contaminants, or deterioration.	A / U	
Light Liquid Pumps	Visually check all pumps, valves, flanges, pressure relief devices, and connections for evidence of leaks.	A / U	
Truck Bay	Check: Evidence of spills in the containment or sump.	A / U	
	Check hoses for signs of wear, leakage, or other damage; hose couplings for proper seals and leaks or other damage.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

**CLEAN HARBORS KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE DAY OF : _____, _____, _____

TIME: _____

INSPECTION UNIT	PROCESSING AREA:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Tank Farm	Check containment and perimeter for wet spots.	A / U	
	Check for cracks or general deterioration of the concrete.	A / U	
	Coating integrity: check for cracks, gaps, flaking, chips, gouges, or other signs of wear.	A / U	
	Sumps: check for accumulations of storm-water, contaminants, or deterioration.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

**CLEAN HARBORS KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE DAY OF : _____, _____

TIME: _____

INSPECTION UNIT: FLAMMABLE TANKS		ELEMENTS					
INSPECTION ITEM:	Leaks & Corrosion	Foundation Integrity	Piping Integrity	Protective Coating	Cap Closed	Pressure Relief Hatch (where appl)	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
V - 1	A / U	A / U	A / U	A / U	A / U	N / A	
V - 2	A / U	A / U	A / U	A / U	A / U	A / U	
V - 3	A / U	A / U	A / U	A / U	A / U	N / A	
V - 4	A / U	A / U	A / U	A / U	A / U	N / A	
V - 5	A / U	A / U	A / U	A / U	A / U	A / U	
V - 6	A / U	A / U	A / U	A / U	A / U	A / U	
V - 7	A / U	A / U	A / U	A / U	A / U	N / A	
V - 8	A / U	A / U	A / U	A / U	A / U	N / A	
V - 17	A / U	A / U	A / U	A / U	A / U	N / A	
Misc. Units: Drum Scraper	A / U	A / U	A / U	A / U	A / U	N / A	
Disperser (V-26)	A / U	A / U	A / U	A / U	A / U	N / A	
Drum Washer	A / U	A / U	A / U	A / U	A / U	N / A	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

**CLEAN HARBORS KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE DAY OF : _____, _____, _____

TIME: _____

INSPECTION UNIT/ AREA: H BUILDING: Operations Shack			
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Log Books	Check to ensure that log entries are made daily and the logs are kept in a designated location.	A / U	
	Check on the following table to ensure that tank strappings are recorded daily for each tank.	A / U	

INSPECTION UNIT/ AREA: H BUILDING: Operations Shack																		
INSPECTION ITEM: Tank Strappings Log																		
V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15A	V15B	V15C	V15D	V16
Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

**CLEAN HARBORS KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE DAY OF : _____, _____, _____

TIME: _____

INSPECTION UNIT	BUILDING C:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Storage	Two foot minimum aisle space between piles of drums.	A / U	
	Check for fire prevention: no smoking, use of non sparking tools, proper use of Hot Work Permits as needed.	A / U	
	Loading/unloading areas: check for evidence of spills or accumulated liquids.	A / U	
	Floors: check for accumulations of liquids or contaminants.	A / U	

INSPECTION UNIT	Drum Dock:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Storage	Two foot minimum aisle space between piles of drums.	A / U	
	Loading/unloading areas: check for evidence of spills or accumulated liquids.	A / U	
Waste Acceptance	Check trucks and vans in dock and in yard: incoming loads must be placed in a Container Management Unit within 72 hours of arrival.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

**CLEAN HALLWAYS KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE DAY OF : _____, _____, _____

TIME: _____

INSPECTION UNIT	BUILDING B:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Storage	Two foot minimum aisle space between piles of drums.	A / U	
	Loading/unloading areas: check for evidence of spills or accumulated liquids.	A / U	
	Sump: Check for accumulations of liquids, contaminants, insecure gratings, or deterioration.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

**CLEAN HAZARDOUS KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE DAY OF : _____ / _____

TIME: _____

INSPECTION UNIT	BUILDING I:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Storage	Two foot minimum aisle space between piles of drums.	A / U	
	Loading/unloading areas: check for evidence of spills or accumulated liquids.	A / U	
	Floors: check for accumulations of liquids or contaminants.	A / U	

INSPECTION UNIT	BUILDING J:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Storage	Two foot minimum aisle space between piles of drums.	A / U	
	Loading/unloading areas: check for evidence of spills or accumulated liquids.	A / U	
	Floors: check for accumulations of liquids or contaminants.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

**CLEAN HARBORS KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE WEEK OF : _____, _____, _____

DATE AND TIME: _____

INSPECTION UNIT	BUILDING D:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Management Area	Labels affixed with generator's name, address, EPA ID#, HRI accumulation start date, EPA waste code, DOT shipping name.	A / U	
	Incompatible wastes are properly segregated.	A / U	
	Lids, bungs closed and secure.	A / U	
	Containers: Evidence of leaks, pressure, structural damage, corrosion or deterioration.	A / U	
	Containment: Evidence of cracks, gaps, flaking, chips, gouges, and other signs of wear.	A / U	
Tank System	Sump: Check for deterioration.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

CLEAN HARBORS KANSAS, LLC
DAILY INSPECTION LOG

FOR THE WEEK OF : _____ / _____ / _____

DATE AND TIME: _____

INSPECTION UNIT: D BUILDING TANKS	ELEMENT STATUS	
INSPECTION ITEM:	Monitoring equipment damage	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
V - 9	A / U	
V - 10	A / U	
V - 11	A / U	
V - 12	A / U	
V - 13	A / U	
V - 14	A / U	
V - 15A	A / U	
V - 15B	A / U	
V - 15C	A / U	
V - 15D	A / U	
V - 16	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

**CLEAN HAZARDOUS WASTES KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE WEEK OF : _____, _____, _____

DATE AND TIME: _____

INSPECTION UNIT	PROCESSING AREA:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Mangement Area	Labels affixed with generator's name, address, EPA ID#, accumulation start date, EPA Wastecode, DOT shipping name.	A / U	
	Incompatible wastes are properly segregated.	A / U	
	Lids, bungs closed and secure.	A / U	
	Containers: evidence of leaks, pressure, structural damage, corrosion or deterioration.	A / U	
	Containment: Evidence of cracks, gaps, flaking, chips, gouges, and other signs of wear.	A / U	
Tank System	Sumps: Check for deterioration.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

**CLEAN HARBORS KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE WEEK OF : _____, _____, _____

DATE AND TIME: _____

INSPECTION UNIT: OUTDOOR TANKS	STATUS	
INSPECTION ITEM:	Monitoring Equipment Damage	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
V - 1	A / U	
V - 2	A / U	
V - 3	A / U	
V - 4	A / U	
V - 5	A / U	
V - 6	A / U	
V - 7	A / U	
V - 8	A / U	
V - 17	NA	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

**CLEAN HARBORS KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE WEEK OF : _____, _____, _____

DATE AND TIME: _____

INSPECTION UNIT	BUILDING C:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Storage	Labels affixed with generator's name, address, EPA ID#, accumulation start date, EPA Wastecode, DOT shipping name.	A / U	
	Incompatible wastes are properly segregated.	A / U	
	Lids, bungs closed and secure.	A / U	
	Containers: Evidence of leaks, pressure, structural damage, corrosion or deterioration.	A / U	
	Containment: Evidence of cracks, gaps, flaking, chips, gouges, and other signs of wear.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

**CLEAN HAZARDOUS WASTES KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE WEEK OF : _____, _____, _____

DATE AND TIME: _____

INSPECTION UNIT	Drum Dock:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Storage	Labels affixed with generator's name, address, EPA ID#, accumulation start date, EPA Wastecode, DOT shipping name.	A / U	
	Lids, bungs closed and secure.	A / U	
	Incompatible wastes are properly segregated.	A / U	
	Containers: Evidence of leaks, pressure, structural damage, corrosion or deterioration.	A / U	
	Containment: Evidence of cracks, gaps, flaking, chips, gouges, and other signs of wear.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

**CLEAN HAZARDOUS WASTES KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE WEEK OF : _____, _____, _____

DATE AND TIME: _____

INSPECTION UNIT	BUILDING B:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Storage	Labels affixed with generator's name, address, EPA ID#, accumulation start date, EPA Wastecode, DOT shipping name.	A / U	
	Incompatible wastes are properly segregated.	A / U	
	Lids, bungs closed and secure.	A / U	
	Containers: Evidence of leaks, pressure, structural damage, corrosion or deterioration.	A / U	
	Containment: Evidence of cracks, gaps, flaking, chips, gouges, and other signs of wear.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

**CLEAN HAZARDOUS WASTES KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE WEEK OF : _____, _____, _____

DATE AND TIME: _____

INSPECTION UNIT	BUILDING I:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Storage	Labels affixed with generator's name, address, EPA ID#, accumulation start date, EPA Wastecode, DOT shipping name.	A / U	
	Incompatible wastes are properly segregated.	A / U	
	Lids, bungs closed and secure.	A / U	
	Containers: Evidence of leaks, pressure, structural damage, corrosion or deterioration.	A / U	
	Containment: Evidence of cracks, gaps, flaking, chips, gouges, and other signs of wear.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

**CLEAN HARBORS KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE WEEK OF : _____, _____, _____

DATE AND TIME: _____

INSPECTION UNIT	BUILDING J:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Storage	Labels affixed with generator's name, address, EPA ID#, accumulation start date, EPA Wastecode, DOT shipping name.	A / U	
	Incompatible wastes are properly segregated.	A / U	
	Lids, bungs closed and secure.	A / U	
	Containers: Evidence of leaks, pressure, structural damage, corrosion or deterioration.	A / U	
	Containment: Evidence of cracks, gaps, flaking, chips, gouges, and othersigns of wear.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

**CLEAN HARBORS KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE MONTH OF : _____, _____

DATE AND TIME: _____

INSPECTION UNIT	PERIMETER AND GENERAL FACILITY		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Facility Gates	Operate and make sure the warning signs are present and visible.	A / U	
Fences	Check for breaks or damage.	A / U	
	Check for erosion under fences.	A / U	
Access Roads	Check for facility debris, deterioration, and spills.	A / U	
Perimeter and Yards	Note any evidence of stressed vegetation or vegetation obscuring signs.	A / U	
Loud Speakers	Check for operability and clarity. Receive confirmation of both.	A / U	
Telephone System, Emergency Alarm	Check for operability and verify contingency plan contact list is present.	A / U	

INSPECTION UNIT/ AREA: G BUILDING: Break Room and Showers			
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Emergency Equipment	Check SCBA for cleanliness, air, operability.	A / U	
	Check first aid kit for stock and accessibility.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS *****

**CLEAN HAZARDOUS WASTE KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE MONTH OF : _____, _____, _____

DATE AND TIME: _____

INSPECTION UNIT	BUILDING D:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Telephone System, Emergency Alarm	Check for operability and verify contingency plan contact list is present.	A / U	
Spill Control Equipment	Check inventory and availability of absorbent, shovel, broom, and drum.	A / U	
PPE Storage	Inspect inventory for adequate supplies and operable condition.	A / U	
Fire Extinguishers	Check seals and pressure. Assure that appropriate type is hanging by signs/ contingency plan.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS *****

**CLEAN HARBORS KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE MONTH OF : _____, _____, _____

DATE AND TIME: _____

INSPECTION UNIT	PROCESSING AREA:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Light Liquid Pumps	Visually check all pumps, valves, flanges, pressure relief devices, and connections for evidence of leaks.	A / U	
	Check that monthly AA BB monitoring has been performed and recorded.	A / U	
Spill Control Equipment	Check for inventory and availability of absorbent, shovel, broom, and drum.	A / U	
Emergency Equipment	Check for cleanliness, proper location of contingency plan equipment, and operability of eyewash and shower stations.	A / U	
Fire Extinguishers	Check for seals and pressure. Assure that correct type is hanging by signs/ contingency plan.	A / U	
Warning Signs	Check that No Smoking Signs are visible on all four sides of the Processing building.	A / U	
Fire Suppression System	Check for deterioration.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS *****

**CLEAN HANDS KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE MONTH OF : _____ / _____

DATE AND TIME: _____

INSPECTION UNIT/ AREA: H BUILDING: Operations Shack			
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Emergency Equipment	Check for stock and accessibility of First Aid kit.	A / U	
Fire Extinguisher	Check for seals and pressure. Assure that correct type is hanging by signs/ contingency plan.	A / U	
Telephone System, Emergency Alarm	Check for operability and verify contingency plan contact list are present.	A / U	

INSPECTION UNIT BUILDING C:			
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Spill Control Equipment	Check for inventory and availability of absorbent, shovel, broom, and drum.	A / U	
Fire Extinguishers	Check for seals and pressure. Assure that correct type is hanging by signs per contingency plan.	A / U	
Telephone System, Emergency Alarm	Check for operability and verify Contingency Plan Contact List is present.	A / U	
Fire Suppression System	Check pressure gauges: water approx. 100PSI, air approx. 40-45PSI.	A / U	

INSPECTION UNIT Drum Dock:			
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Telephone System, Emergency Alarm	Check for operability and verify contingency plan contact list is present.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS *****

**CLEAN HARBORS KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE MONTH OF : _____, _____, _____

DATE AND TIME: _____

INSPECTION UNIT	WEST YARD		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Facility Gates	Check: should be locked, and warning signs present and visible.	A / U	
Access Roads	Check for facility debris, deterioration, and spills.	A / U	
Fences	Check for breaks or damage.	A / U	
	Check for erosion under fences.	A / U	
Perimeter and Yards	Note any evidence of stressed vegetation.	A / U	
INSPECTION UNIT	BUILDING B:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Spill Control Equipment	Check for inventory of absorbent, soda ash, shovel, broom, and poly drum.	A / U	
Telephone System, Emergency Alarm	Check for operability and verify contingency plan contact list is present.	A / U	
Fire Extinguishers	Check seal and pressure. Assure appropriate type is hanging by sign/ contingency plan.	A / U	
INSPECTION UNIT/ AREA: A BUILDING: Laboratory			
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Emergency equipment	Check eyewash and shower stations for cleanliness, and accessibility.	A / U	
Fire Extinguishers	Check seal and pressure. Assure appropriate type is hanging by sign/ contingency plan.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS *****

**CLEAN HAZARDOUS WASTE KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE MONTH OF : _____, _____, _____

DATE AND TIME: _____

INSPECTION UNIT	WEST YARD		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Telephone System, Emergency Alarm	Check for operability and verify contingency plan contact list is present.	A / U	
INSPECTION UNIT	BUILDING I		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Gates & Doors	Operate and make sure the warning signs are present and visible. Gates and doors should be locked unless in use.	A / U	
Fire Extinguishers	Check seal and pressure. Assure appropriate type is hanging by sign/ contingency plan.	A / U	
Access Roads and Yards	Check for facility debris, deterioration, and spills.	A / U	

INSPECTION UNIT	BUILDING J		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Gates & Doors	Operate and make sure the warning signs are present and visible. Gates and doors should be locked unless in use.	A / U	
Fire Extinguishers	Check seal and pressure. Assure appropriate type is hanging by sign/ contingency plan.	A / U	
Access Roads and Yards	Check for facility debris, deterioration, and spills.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS *****

CLEAN TANKS BORS KANSAS, LLC
DAILY INSPECTION LOG

FOR THE PERIOD OF : _____ TO _____, _____

DATE INSPECTED: _____, TIME: _____

INSPECTION UNIT	BUILDING D AND PROCESSING TANKS		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Overfill control system	Manually check operability of relief/detection valves. Record results on the following table.	A / U	

INSPECTION UNIT: Tanks																			
INSPECTION ITEM: Tank relief/detection valves																			
V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15A	V15B	V15C	V15D	V16	
A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS *****

**CLEAN TOWNSHIPS KANSAS, LLC
DAILY INSPECTION LOG**

FOR THE PERIOD OF : _____ TO _____, _____

DATE INSPECTED: _____, TIME: _____

INSPECTION UNIT	ANNUAL INSPECTION		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Fire Hydrants	Check for adequate water supply, and leaks or evidence of corrosion.	A / U	
Pumps and ancillary equipment	Check for leaks in accordance with method 21 referenced in 264.1063. Record in Subpart AA and BB monitoring record book.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS *****

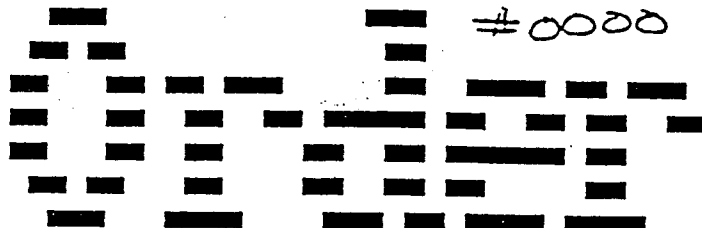
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APPENDIX F-B

SAMPLE REMEDIAL WORK ORDER

Form May be Modified

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Date Found: _____		Date to be Done: _____	
Location: _____		Extended Until: _____	
Issue: _____		By: _____	
_____		Compliance Issue: ()	
_____		Not Compliance: ()	
We Need To: _____			
Assigned To: _____		Supervisor: _____	
Comments: _____		_____	
_____		Inspector: _____	
How Corrected: _____			
By Whom: _____		Date Corrected: _____	
Accepted as Corrected By: _____		Date: _____	
Comments: _____			

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Appendix F-C - General Facility Inspection schedule

INSPECTION PARAMETER	INSPECTION PROCEDURE	INSPECTION FREQUENCY
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APPENDIX F-C

GENERAL FACILITY INSPECTION SCHEDULE

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 Appendix F-C - General Facility Inspection schedule

INSPECTION PARAMETER	INSPECTION PROCEDURE	INSPECTION FREQUENCY
General Facility and Perimeter	Visually check fences and gates for breaks or damage.	Monthly
	Visually check warning signs for clear visibility.	Monthly
	Visually check for erosion under fences.	Monthly
	Visually check access and intra-facility roads for spills.	Daily
	Visually check for vegetation obscuring warning signs along the fence.	Monthly
Safety and Emergency Equipment	Inspect tags of fire extinguishers for expiration dates and adequate pressure.	Monthly
	Test telephones for proper operation.	Monthly
	Test alarms for proper operation.	Monthly
	Test paging and loudspeaker systems for proper operation.	Monthly
	Inspect self-contained breathing apparatus (SCBA) for air pressure with a pressure gauge. Inspect regulators to verify that air passage is unobstructed. Visually check masks and hoses for serviceability.	Monthly
	Inspect first aid stations.	Monthly
	Inspect fire hydrants for adequate water supply, and leaks or evidence of corrosion.	Annually

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INSPECTION PARAMETER	INSPECTION PROCEDURE	INSPECTION FREQUENCY
	Visually inspect sprinkler systems and other fire suppression systems.	Monthly
	Inspect external condition of safety showers and operate to verify adequate water flow.	Monthly
	Inspect external condition of eye wash stations and operate to verify adequate water flow.	Monthly
	Inspect spill response and decontamination equipment for operable condition. Spill response equipment includes the following: Overpack drums Absorbents Portable pumps Hand tools Brooms Detergent Absorbent towels	Monthly
	Inspect inventory of Facility PPE for adequate supplies and operable condition. PPE includes the following: Cartridge respirators Supplied air respirators Protective clothing Specialized gloves Specialized footwear Hearing protection Eye protection Hard hats	Monthly

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Appendix F-D - Container, CMU Inspection Schedule

APPENDIX F-D

INSPECTION SCHEDULE FOR CONTAINERS

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Appendix F-D - Container, CMU Inspection Schedule

This schedule applies to active Container Management Units (CMUs) at CHK, except as noted.

INSPECTION PARAMETER	INSPECTION PROCEDURE	INSPECTION FREQUENCY
Container Management System	Inspect containment system loading and unloading areas for evidence of spills or accumulated liquids.	Daily
	Inspect aisles in container storage areas for a minimum of two (2) feet of aisle space.	Daily
	Visually inspect containers for evidence of pressure build-up, structural damage, leaks, missing cap or bung, corrosion, or deterioration.	Weekly
	Visually inspect containers for legible markings or identification labels.	Weekly
	Inspect the container storage areas, concrete slab, and curbs for cracks, gaps, flaking, chips, gouges, and other signs of wear.	Daily
	Inspect sumps for presence of liquids.	Daily
	Inspect container management areas to ensure incompatible wastes are properly segregated.	Weekly
	Inspect equipment and conveyors for operability, condition.	Weekly

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APPENDIX F-E

INSPECTION SCHEDULE FOR TANK SYSTEMS

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 Appendix F-E - Tank Systems Inspection Schedule

INSPECTION PARAMETER	INSPECTION PROCEDURE	INSPECTION FREQUENCY
Tank System:	Where appropriate, visually inspect the exterior condition of the tank (e.g. for evidence of leaks, stains, corrosion etc.) and the area immediately surrounding the externally accessible portion of the tank systems for erosion or evidence of releases of waste (e.g., wet spots, discolorations).	Daily
	Inspect tank containment system (concrete slab, sumps, and curbs) for cracks, gaps, flaking, chips, gouges, wet areas, puddles, and other signs of wear and leaking.	Daily
	Where appropriate, inspect monitoring equipment installed on the tanks for evidence of damage.	Weekly
	Inspect tank loading and unloading areas for evidence of spills. Inspect hoses for signs of wear, leakage or other damage. Inspect hose couplings for proper seals and leaks and other damage.	Daily
Overfill Control System	Check electronic indicator system for operability.	Daily
	Manually check operability of overfill floats.	Quarterly
Containment for: Truck Docks and Unloading area	Visually inspect for evidence of spills.	Daily

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INSPECTION PARAMETER	INSPECTION PROCEDURE	INSPECTION FREQUENCY
Sumps	Visually inspect for standing liquids.	Daily
	Visually inspect for cracks, gaps, or deterioration.	Weekly
Process Equipment (Conveyors, Valves, Feeders)	Visually inspect for corrosion, deterioration.	Daily
	Visually inspect to assure guards are in place.	Daily

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Appendix F-F - Other Regulated Units Inspection Schedule

APPENDIX F-F

INSPECTION SCHEDULE FOR MISCELLANEOUS UNITS

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Appendix F-F - Other Regulated Units Inspection Schedule

INSPECTION PARAMETER	INSPECTION PROCEDURE	INSPECTION FREQUENCY
Miscellaneous Units	Check surface of unit for evidence of leaks or structural damage.	Daily, when in service
	Inspect the secondary containment, coating (where present), concrete slab, and curbs for cracks, gaps, flaking, chips, gouges, and other signs of wear.	Daily, when in service

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Appendix F-G - Air Emissions Inspection Schedule

APPENDIX F-G

INSPECTION SCHEDULE FOR RCRA AIR EMISSIONS MONITORING

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Appendix F-G - Air Emissions Inspection Schedule

INSPECTION PARAMETER	INSPECTION PROCEDURE	INSPECTION FREQUENCY
Pumps and Ancillary Equipment	Monitor for volatile air emissions as required.	Monthly and Annually
	Visually monitor as required for evidence of leaks.	Daily when in use

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List of Figures

Figure G.1, Facility Layout

List of Referenced Drawings

Drawings located in Section Y, Referenced Drawings

Drawing 50-01-01-002, Facility Layout

List of Acronyms

Clean Harbors Kansas, LLC (CHK)
Public Address (PA)
Hazardous Waste Management Unit (HWMU)
Container Management Unit (CMU)
Personal Protective Equipment (PPE)
Self-Contained Breathing Apparatus (SCBA)
National Fire Protection association (NFPA)

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G-1 Introduction

Waste management processes at Clean Harbors Kansas, LLC (CHK) are designed with safety features for protection of human health, the environment, and the general public. This section is a description of the measures used to prevent hazards during waste management at the facility. The hazardous waste units at the facility include storage tanks, container management units, loading and unloading facilities, and waste treatment equipment.

G-2 Security: 40 CFR 264.14, 270.14(b)(4)

G-2a Security Procedures and Equipment:

The CHK facility will be secured to prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of the facility, to protect human health and the environment. (The active portion of the facility, hereinafter referred to in this section as "the facility," is as defined by 40 CFR 261.10.) This will be accomplished by provisions such as, fencing, gates, an electronically controlled security system, and warning signs. Presence of facility personnel during shift operations will

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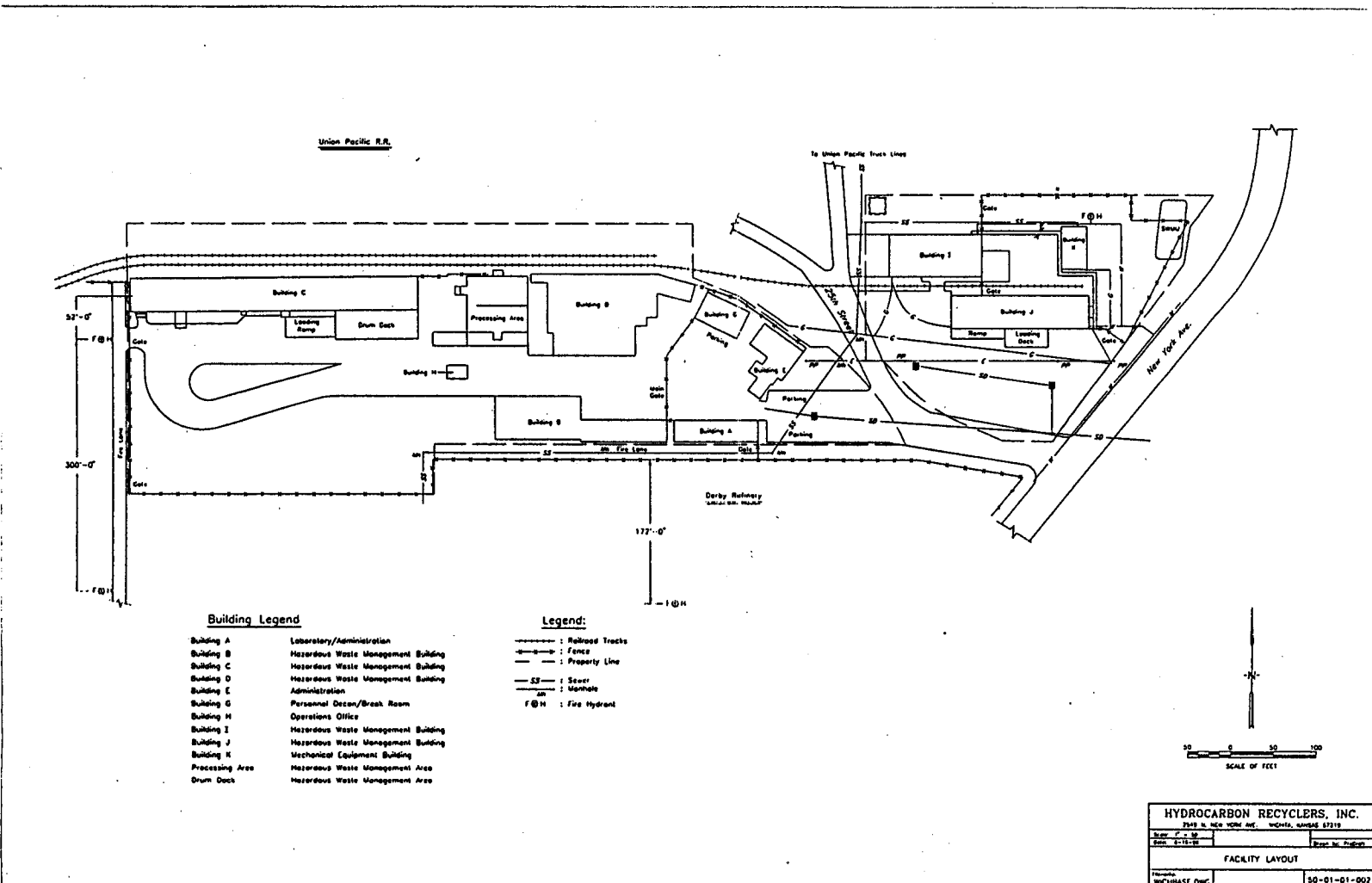
minimize or prevent incidents of trespassing and vandalism.

Fencing is not provided where buildings and building entrances provide a barrier to unauthorized entry. In addition, employees are instructed to question and direct unauthorized visitors to the office should they try to enter the facility. These security provisions are further discussed below.

- . Fence: where required for security, the facility is surrounded by a six (6) foot high chain link fence with gates at various locations. Figure G.1, Facility Layout, Drawing 50-01-01-002, Facility Layout gives the location of fencing and gates. Entry into the facility will be controlled by the fencing, gates, and buildings. Gates and doors which allow access to the facility are to remain closed and secured against entry unless in use. Personnel and vehicle access will be controlled by an electronic system or by designated facility personnel.

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Facility Layout

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. Vehicle Access: Vehicles must be authorized to enter the facility. Normal vehicle access is through the main entrance; this entrance is provided with electronic controls. However, when attended by facility personnel, other gates may be used with prior authorization. These secondary gates may also be used while evacuating the facility. In the event of a failure or scheduled shutdown of the electronic gate system, the main entrance gate will be operated manually. The operation of the secondary gates will not be affected by a power failure, since these gates will not be electronically controlled.

. Personnel Access: These procedures are designed to control unauthorized entry into the facility. Access into the facility will be controlled by the fencing, gates, buildings, and facility personnel. Non-employee personnel including contractors, consultants, governmental agency personnel and visitors will be required to sign in prior to being granted entry into the facility. Entry to the facility will be monitored by facility personnel.

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Warning signs: Warning signs will be posted on or adjacent to all gates. The signs, written in English, will state at a minimum, "DANGER - UNAUTHORIZED PERSONNEL KEEP OUT." The lettering on warning signs will be at least two (2) inches high to be legible from a distance of twenty-five (25) feet.

The lettering and the sign background will be contrasting colors. Warning signs will also be placed along the fence and, where appropriate, along building exterior walls so as to be seen from any approach to the facility.

Signs are posted inside the facility to warn personnel about potential hazards. These signs may be required, for example, by OSHA regulations (e.g., NO SMOKING, EYE PROTECTION REQUIRED, HEARING PROTECTION REQUIRED, DANGER - HIGH VOLTAGE, etc.). The signs will be located as appropriate.

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G-3 Inspection Schedule: 40 CFR 264.15, 264.33, 264.174,
270.14 (b) (5)

CHK has developed an Inspection Plan to provide a systematic method of identifying potential problems, malfunctions, or deterioration which may cause or lead to a release of hazardous constituents to the environment or a threat to human health. The facility inspection plan, including inspection schedules, is presented in Section F, Inspection Plan.

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G-4 Preparedness and Prevention Requirements: 40 CFR
270.14(b) (6)

CHK is operated and maintained to minimize the possibility of hazards such as fire, explosion, or unplanned release of hazardous waste, etc. to air, soil, or surface water which may threaten human health or the environment. The inspection schedule for facility safety and emergency equipment is provided in Section F, Inspection Plan.

G-4a Equipment Requirements: 40 CFR 264.32

G-4a(1) Internal Communications: 40 CFR 264.32(a)

Communications inside CHK can be achieved through a telephone system and a Public Address (PA) system. Telephones will be located so that employees will have access to a phone. An employee will be able to call any other telephone in the facility, and can access the PA system for paging. The paging system will broadcast through a series of loudspeakers. Two way communication devices or paired work crews (i.e., the buddy system) will ensure that every employee has immediate access to communication in the event of an emergency.

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The internal communication system will be tested monthly, as indicated in the Inspection Plan, Section F. However, use of the internal communication system during the course of normal operations will more quickly identify developing problems.

An alarm system will alert personnel to major emergencies. Alarms will consist of a siren (activated at manual pull stations) or a broadcast over the paging system loudspeakers (activated by dialing the appropriate code at any telephone). Emergency telephone numbers and instructions are posted at or nearby every telephone in the active portion of the facility; emergency telephone numbers are also available in office areas.

G-4a(2) External Communications: 40 CFR 264.32(b)

External facility communications will be available through the local telephone company. Local (Wichita) or long distance telephone connections are available. Arrangements for emergency response have been made with appropriate outside agencies; see the Contingency/Emergency Plan, Section H.

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G-4a(3) Emergency Equipment: 40 CFR 264.32(c)

Portable fire extinguishers, fire control equipment, spill control equipment, and decontamination equipment will be available at the facility. Descriptions, locations, and a list of emergency equipment for the facility are provided in Section H, Contingency Plan. Emergency equipment is inspected for availability and readiness according to the schedule given in Section F, Inspection Plan.

G-4a(4) Water for Fire Control: 40 CFR 264.32(d)

The facility has a supply of water available for fire fighting. Water for fire protection is supplied by a water main which is part of the City of Wichita public water system. Hazardous Waste Management Unit (HWMU)s are provided with appropriate fire protection systems meeting the applicable requirements of the City Building Code and NFPA. These systems are designed to extinguish or confine the spread and area of exposure of a fire.

The systems may consist of fire hydrants, overhead sprinkler systems, or other types of fire protection systems.

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A description of the fire protection equipment at Clean Harbors Kansas, LLC is included in Section H, Contingency Plan.

G-4b Aisle Space Requirement: 40 CFR 264.35

Container Management Unit (CMU)s will have access aisles maintained to allow hand held and portable emergency response equipment to be moved. Adequate aisle space is maintained to allow unobstructed movement of personnel, fire protection equipment, or spill control equipment; and is ensured by regular inspections, per the inspection schedule in Section F, Inspection Plan. Container management areas will have a minimum aisle space of two (2) feet as described in Section D. Sufficient aisle space will be provided within the tank storage areas to allow access in an emergency situation.

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G-5 Preventive Procedures, Structures, and Equipment: 40 CFR
270.14(b) (8)

Various structures have been constructed, safety features have been incorporated, and operating procedures have been developed, to minimize hazards to human health and the environment. Procedures, equipment, and structures utilized to prevent hazards are described in the following sections.

- . A description of the Container Management Units is provided in Section D, Use and Management of Containers.
- . A description of tank systems is provided in Section E, Tank Systems.
- . A list of emergency equipment and a description of the emergency procedures are provided in the Contingency /Emergency Plan, Section H; a copy of this plan will be available at the facility at all times.
- . Additional information regarding operating procedures are described in Section C, Waste Characterization, Section F, Inspection Plan, and Section I, Training Program.

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Appropriate material handling equipment and devices will be employed in the waste management areas. Applicable safeguards will be observed during repairs performed near ignitable materials (e.g., no smoking, no sparks, no open flames, etc.). Special precautions will be taken to prevent accidental ignition of ignitable wastes or the uncontrolled mixing of incompatible wastes (Refer to G-6 of this section).

G-5a Loading and Unloading Operations: 40 CFR
 270.14(b) (8) (i)

Facility operations personnel receive training on proper loading and unloading procedures. This training will include instruction on machinery operation, safety equipment, waste identification, and processing procedures. A description of the personnel training plan (e.g., job-specific training) is provided in Section I, Training Program.

Various structures and equipment are utilized during loading and unloading operations to prevent environmental and health hazards.

Container Management procedures are detailed in Section D, Use and Management of Containers.

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Standard loading/unloading procedures are described below.

- . Bulk Liquid Wastes: Prior to loading or unloading a bulk liquid container (e.g., a tanker truck) the operator will visually check valve position, that hoses are secured, and that any needed hose connection plugs and caps are in place.

Following the loading or unloading of a bulk liquid container, the operator will visually check valve position, and that any needed hose connection plugs and caps are in place. Bulk metal containers holding ignitable liquid wastes will be grounded and bonded prior to loading or unloading.

- . Bulk Solid Wastes: Many types of bulk solid and sludge containers will arrive by truck or rail. The containers may include sludge boxes, intermodal containers, end-dump trucks, etc. The contents of bulk containers of solids and sludge will be either directly unloaded into tanks or other containers, or the containers may be stored in CMUs prior to treatment or handling. At a minimum, two persons will be present during the waste loading/unloading operations.

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Containerized Wastes: Elevated docks are provided to facilitate loading and unloading of containerized wastes at the Drum Dock, and at Building J. Trucks are loaded or unloaded using an industrial truck or a drum dolly, or other appropriate container handling equipment. Containers are typically fifty-five (55) gallon drums, although larger and smaller containers may also be handled.

Manual handling of the containers will be minimized. Industrial trucks are capable of lifting and transporting one or more containers at a time. Drum grapplers (e.g., a semi-circular shaped arm attachment to the forks) or fork attachments for the forklift truck will be used for lifting and transporting individual containers. These drum grasping attachments are capable of securely holding a container during lifting and transporting without requiring additional straps or hooks. The operator is responsible for ensuring that the truck and the dock or ramp are properly aligned before any loading or unloading activities are initiated.

Drum dollies may be used to move individual containers (typically drums). The dollies have forks or a plate which can be inserted beneath the bottom of an individual container to support the container during lifting and transporting. The dollies either

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have a clip to secure the top of the container, or are shaped in an arc to cradle the container during lifting and transport.

These drum dollies have features capable of holding a container during lifting and transporting without requiring additional straps. Some manual handling of the containers may be necessary.

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G-5b Run-off and Run-on: 40 CFR 270.14(b) (8) (ii)

Precipitation and spills in waste management areas will be contained by dedicated secondary containment structures. These structures will prevent run-off to the environment or other facility areas. Secondary containment systems may contain one or more sumps to allow collection and removal of any accumulated liquids. Accumulated liquids will be managed in accordance with Section C, Waste Characterization. Containment systems not protected from precipitation by a building have been designed to accommodate the intrusion of precipitation from a twenty-five (25) year, twenty-four (24) hour storm event. Drawings showing the design and dimensions of containment systems are provided in Sections D, Use and Management of Containers and E, Tank Systems of this permit application.

Precipitation falling outside of the containment areas is controlled to prevent run-on of storm water into a waste management unit. Storm water falling into the active areas of the site is managed through a storm water drainage system.

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Spills of hazardous waste will be promptly controlled and removed, when discovered, to prevent the spread of contaminants.

Spill response procedures are provided in Section H, Contingency/Emergency Plan. The spilled material and any absorbent used will be placed into appropriate containers. The waste will be managed in accordance with Section C, Waste Characterization.

G-5c Water Supplies: 40 CFR 270.14(b)(8)(iii)

Operations at CHK will require water for potable and process usage. Water supplies include City of Wichita water as well as ground water available on site. City (potable) water will be used for personnel decontamination (e.g., eye-wash stations, safety showers, and sanitary needs).

Process water is used for waste treatment, equipment decontamination, fire fighting, etc. The process water will be supplied either from the City of Wichita distribution system or from ground water at the facility. Potable and process water are distributed, as needed, throughout the facility. Physical separation will be used to prevent contamination of the water in a delivery system by back-siphoning of contaminants.

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G-5d Equipment and Power Failure: 40 CFR 270.14(b)(8)(iv)

Normally, the electrical requirements of CHK will be met with power purchased from the local power utility. There are no processes involving high pressures or reactions which, as a result of a power outage, might "run away" and cause fires, explosions, or other sudden releases of hazardous waste.

In the event of a power outage, facility personnel will proceed as follows.

- . Cease operations
- . Switch off process equipment
- . Close appropriate valves
- . Report to their supervisor(s) for further instructions

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G-5e Personal Protective Equipment: 40 CFR 270.14(b)(8)(v)

Personal Protective Equipment (PPE) available at the facility will include the following.

- . Self-Contained Breathing Apparatus (SCBA): A portable device to supply breathing air will be available on-site.
- . Cartridge respirator: Employees will be issued the appropriate mask and cartridges for the work area. Cartridges for the masks will be stocked at the facility.
- . Supplied air: Buildings I and J will be equipped with a supplied air system to minimize the necessity for respirators in the container handling areas.
- . Protective clothing: Employees performing specific tasks in HWMUs will be issued hard hats, protective coveralls, safety glasses, chemical resistant steel toe boots, specialized gloves, and hearing protection as appropriate. A supply of the appropriate protective clothing will be maintained at the facility.

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Minimum PPE for all personnel within the active portion of the facility is a hard hat and eye protection. This minimum protection level will not apply to personnel within passenger

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vehicles, the administration building, control rooms, or any other office space within the facility in which the risk of a head or eye injury does not exceed normal office work risks. Personnel within specific waste management units will be provided with a hard hat, eye protection, and chemical resistant boots. Additional PPE will be provided as required for specific tasks.

Employees will be trained in proper PPE decontamination during their introductory training.

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G-5f Prevention of Releases to Atmosphere: 40 CFR
270.14 (b) (8) (vi)

The facility is designed, constructed, maintained, and operated to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment as required by 40 CFR 264.31.

The facility Inspection Plan (Section F), Emergency/Contingency Plan (Section H), and Training Plan (Section I) have been developed to enable the facility to prevent releases including emissions and to respond to any releases that may occur.

Waste management practices designed to minimize potential releases to the atmosphere include procedures as specified in 40 CFR 264.173. Containers remain closed during storage, except when it is necessary to add or remove waste or reagents. Containerized hazardous waste is managed in a manner which minimizes the potential for rupture of containers or damage to containers which could result in leakage. Ramps and automated transfer equipment facilitate safe movement of waste between management areas.

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Tank and process unit management practices are designed to comply with the requirements of 40 CFR 264.194. Materials are not intentionally placed in a tank system or process unit if they could cause the unit to rupture, leak, corrode, or otherwise fail. Some of the process units are equipped with emission control devices, as discussed in Section M, Other Regulated Units. Tank systems deemed unfit for use will be removed from service as required by 264.196. Releases from tank systems or process units will be removed and/or cleaned up at the earliest practicable time to minimize potential for release to atmosphere by evaporation.

An emissions monitoring program for equipment subject to 40 CFR Subpart BB is in place at the facility. Details regarding this program presented in Section N (Air Emissions) of this application.

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G-6 Prevention of Reaction of Ignitable, Reactive and Incompatible Wastes:

G-6a Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Waste and Mixing of Incompatible Wastes: 40 CFR 264.17(a), 270.14(b) (9)

Precautions will be taken at the facility during storage, treatment, or handling to avoid the accidental ignition or reaction of waste and mixing of incompatible wastes. These precautions are intended to prevent generation of undesirable heat, pressure, fire, explosion, toxic gases, or fumes which could result in damage to the structural integrity of any portion of the facility or cause a threat to human health or the environment. The precautions will include the following.

. Ignitable waste will be protected from open ignition sources such as open flames, metal welding and cutting, hot surfaces, frictional heat, smoking, and sparks (static, electrical, or mechanical). Tanks storing ignitable wastes will be grounded to protect the contents from ignition by a spark. Bulk metal containers (tank trailers and transport tanks) of ignitable liquid wastes will also be grounded and bonded before and during transfer of material through pipes

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or hoses. Signs prohibiting smoking will be conspicuously placed within and near the ignitable waste storage areas. Applicable safeguards (e.g., no smoking, no sparks) will be observed during repairs performed near ignitable materials.

- . Buildings which enclose waste processing operations will be ventilated appropriately to avoid an accumulation of hazardous mists, vapors, dusts, or gases; or of flammable vapors or gases.

- . Ignitable and reactive wastes are stored at least fifty (50) feet away from the facility boundary.

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G-6b Management of Ignitable or Reactive Wastes in Containers:
40 CFR 264.176, 270.15(c)

Ignitable or reactive wastes in containers may be either solid, sludge, or liquid. Ignitable or reactive wastes in containers will be managed in accordance with the following guidelines.

- . Ignitable or reactive wastes are protected from spontaneous ignition caused by heat-producing chemical reactions by segregating incompatible wastes in separate CMUs. Segregated secondary containment will prevent mixing of incompatible wastes.
- . The buildings have been designed to comply with the City Building Code and the appropriate codes of the National Fire Protection Association (NFPA). Interior and exterior walls of the CMUs meet the requirements of the applicable Building Code and NFPA codes. Equipment and personnel access doors meet the applicable codes.
- . Containerized ignitable or reactive liquid wastes may be decanted and transferred to a storage tank for blending or

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processing through the Processing Area, re-containerized for shipment, treated in containers, or shipped off-site in their original containers.

Section G-6d provides information on the management of ignitable and reactive wastes in tanks.

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G-6c Management of Incompatible Wastes in Containers: 40 CFR
264.177, 270.15(d)

Measures to prevent the inadvertent mixing or commingling of incompatible wastes in containers will include the following:

- . Incompatibility between wastes or a waste and a container will be determined in accordance with Section C, Waste Characterization.
- . Containers of waste received within one truck trailer will be unloaded and managed as described in Section C, Waste Characterization. If, during incoming load analysis, incompatible wastes in a common CMU are identified, the containers holding the incompatible waste will be removed and placed in an appropriate area or provided with a portable containment system. Section D, Use and Management of Containers provides a description of the container storage and processing procedures.

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Wastes found to be incompatible under the procedures in Section C will not be placed in the same container except under controlled circumstances during treatment. Wastes added to containers must be compatible with the container itself.

G-6d Management of Ignitable or Reactive Wastes in Tanks: 40 CFR
264.198, 270.16(j)

Proper precautions are and will be taken (when managing ignitable or reactive wastes) to prevent reactions which: 1) generate extreme heat or pressure, fire or explosion, or violent reactions; and 2) produce uncontrolled toxic mists, fumes, dusts, gases in sufficient quantities to threaten human health or the environment. Wastes exhibiting the characteristic of reactivity will not be placed in any of the tank systems located at the CHK facility unless the waste is treated, otherwise managed, or mixed before or immediately after placement into a tank system.

Reactive wastes will be stored in tanks or containers in such a way that they are protected from materials or conditions which might produce a dangerous or unacceptable reaction.

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Liquid wastes which exhibit the characteristics of ignitability will be placed in appropriate tanks or containers for storage and/or treatment at the facility. Section E, Tank Systems, provides details regarding hazard management in tanks. All ignitable wastes will be stored more than fifty feet from the CHK property boundary.

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G-6e Management of Incompatible Wastes in Tanks: 40 CFR
264.199, 270.16(j)

Proper precautions are and will be taken (when managing incompatible wastes, or mixing incompatible wastes or incompatible wastes and other materials) to prevent reactions which: 1) generate extreme heat or pressure, fire or explosion, or violent reactions; and 2) produce uncontrolled toxic mists, fumes, dusts, gases in sufficient quantities to threaten human health or the environment. Measures to prevent the inadvertent mixing or commingling of incompatible wastes in tanks will include the following:

- . Compatibility will be determined in accordance with Section C, Waste Characterization.

- . Incompatible wastes will not be placed in the same tank unless the waste is treated, otherwise managed, or mixed before or immediately after placement into a tank system. The characterization of waste for compatibility is determined according to Section C, Waste Characterization. If waste is added to a contaminated, empty tank, the waste must be compatible with the previous contents of the tank.

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If waste is to be placed in a tank which previously held a waste with which it would be incompatible, then the decontamination procedures in Section C, Waste Characterization will be followed.

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G-7 Air Emission Standards for Equipment Leaks: 40 CFR
264.1050 - 264.1065, 270.25

Fugitive emissions from equipment associated with management of hazardous waste contacting or containing ten (10) percent by weight of organics are regulated under Subpart BB of Part 264. Details regarding these requirements are addressed in Section N, Air Emissions.

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Appendix G-A - Sample Inspection Log Sheet

APPENDIX G-A

SAMPLE INSPECTION LOG SHEET

Form May be Modified

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Clean Harbors Kansas, LLC
DAILY INSPECTION LOG

FOR THE DAY OF : _____, _____

TIME: _____

INSPECTION UNIT	PERIMETER AND YARDS		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Facility Gates	Check: should be locked, and warning signs present and visible.	A / U	
Access Roads	Check for facility debris, deterioration, and spills.	A / U	
Perimeter and Yards	Check for contaminated pallets, hoses, equipment or debris, or evidence of spills.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

Clean Harbors Kansas, LLC
DAILY INSPECTION LOG

FOR THE DAY OF : _____ / _____

TIME: _____

INSPECTION UNIT	BUILDING D:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Storage	Two foot minimum aisle space between piles of drums.	A / U	
	Loading/unloading areas: check for evidence of spills or accumulated liquids.	A / U	
	Sump: Check for accumulation of liquid, contaminants, or deterioration.	A / U	
Containment area: Inside Tank Room	Cracks or general deterioration of the concrete.	A / U	
	Floor coating integrity: Check for cracks, gaps, flaking, chips, gouges, or other signs of wear or leaking.	A / U	
	Sump: Check for accumulations of liquid, contaminants, or deterioration.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

Clean Hands Kansas, LLC
DAILY INSPECTION LOG

FOR THE DAY OF : _____, _____, _____

TIME: _____

INSPECTION UNIT: D BUILDING, TANKS & MISCELLANEOUS UNITS	E L E M E N T S						
	Leaks, Deteri- oration, Cor- rosion	Foundation Integrity	Piping Integrity	Protective Coating	Lid/Cap Closed	Pressure Re- lief Hatch (where appl)	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
V - 9	A / U	A / U	A / U	A / U	A / U	A / U	
V - 10	A / U	A / U	A / U	A / U	A / U	A / U	
V - 11	A / U	A / U	A / U	A / U	A / U	A / U	
V - 12	A / U	A / U	A / U	A / U	A / U	A / U	
V - 13	A / U	A / U	A / U	A / U	A / U	A / U	
V - 14	A / U	A / U	A / U	A / U	A / U	A / U	
V - 15A	A / U	A / U	A / U	A / U	A / U	A / U	
V - 15B	A / U	A / U	A / U	A / U	A / U	A / U	
V - 15C	A / U	A / U	A / U	A / U	A / U	A / U	
V - 15D	A / U	A / U	A / U	A / U	A / U	A / U	
V - 16	A / U	A / U	A / U	A / U	A / U	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

**Clean Hands Kansas, LLC
DAILY INSPECTION LOG**

FOR THE DAY OF : _____, _____, _____

TIME: _____

INSPECTION UNIT	PROCESSING AREA:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Storage, Ignitable Storage, Containment	Two foot minimum aisle space between piles of drums.	A / U	
	Loading/unloading areas: check for evidence of spills or accumulated liquids.	A / U	
	Cracks or general deterioration of the concrete.	A / U	
	Coating integrity: check for cracks, gaps, flaking, chips, gouges, or other signs of wear.	A / U	
	Check for fire prevention: no smoking, use of non sparking tools, proper use of Hot Work Permits as needed.	A / U	
	Sump and Containment: Check for accumulations of stormwater, contaminants, or deterioration.	A / U	
Light Liquid Pumps	Visually check all pumps, valves, flanges, pressure relief devices, and connections for evidence of leaks.	A / U	
Truck Bay	Check: Evidence of spills in the containment or sump.	A / U	
	Check hoses for signs of wear, leakage, or other damage; hose couplings for proper seals and leaks or other damage.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

Clean Harbors Kansas, LLC
DAILY INSPECTION LOG

FOR THE DAY OF : _____, _____

TIME: _____

INSPECTION UNIT	PROCESSING AREA:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Tank Farm	Check containment and perimeter for wet spots.	A / U	
	Check for cracks or general deterioration of the concrete.	A / U	
	Coating integrity: check for cracks, gaps, flaking, chips, gouges, or other signs of wear.	A / U	
	Sumps: check for accumulations of storm-water, contaminants, or deterioration.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

Clean Harbors Kansas, LLC
DAILY INSPECTION LOG

FOR THE DAY OF : _____, _____

TIME: _____

INSPECTION UNIT: FLAMMABLE TANKS	E S L T E M E N T S						
INSPECTION ITEM:	Leaks & Corrosion	Foundation Integrity	Piping Integrity	Protective Coating	Cap Closed	Pressure Relief Hatch (where appl)	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
V - 1	A / U	A / U	A / U	A / U	A / U	N / A	
V - 2	A / U	A / U	A / U	A / U	A / U	A / U	
V - 3	A / U	A / U	A / U	A / U	A / U	N / A	
V - 4	A / U	A / U	A / U	A / U	A / U	N / A	
V - 5	A / U	A / U	A / U	A / U	A / U	A / U	
V - 6	A / U	A / U	A / U	A / U	A / U	A / U	
V - 7	A / U	A / U	A / U	A / U	A / U	N / A	
V - 8	A / U	A / U	A / U	A / U	A / U	N / A	
V - 17	A / U	A / U	A / U	A / U	A / U	N / A	
Misc. Units: Drum Scraper	A / U	A / U	A / U	A / U	A / U	N / A	
Disperser (V-26)	A / U	A / U	A / U	A / U	A / U	N / A	
Drum Washer	A / U	A / U	A / U	A / U	A / U	N / A	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

Clean Harbors Kansas, LLC
DAILY INSPECTION LOG

FOR THE DAY OF : _____, _____, _____

TIME: _____

INSPECTION UNIT/ AREA: H BUILDING: Operations Shack			
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Log Books	Check to ensure that log entries are made daily and the logs are kept in a designated location..	A / U	
	Check on the following table to ensure that tank strappings are recorded daily for each tank.	A / U	

INSPECTION UNIT/ AREA: H BUILDING: Operations Shack																		
INSPECTION ITEM: Tank Strappings Log																		
V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15A	V15B	V15C	V15D	V16
Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

Clean Harbors Kansas, LLC
DAILY INSPECTION LOG

FOR THE DAY OF : _____, _____

TIME: _____

INSPECTION UNIT	BUILDING C:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Storage	Two foot minimum aisle space between piles of drums.	A / U	
	Check for fire prevention: no smoking, use of non sparking tools, proper use of Hot Work Permits as needed.	A / U	
	Loading/unloading areas: check for evidence of spills or accumulated liquids.	A / U	
	Floors: check for accumulations of liquids or contaminants.	A / U	

INSPECTION UNIT	Drum Dock:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Storage	Two foot minimum aisle space between piles of drums.	A / U	
	Loading/unloading areas: check for evidence of spills or accumulated liquids.	A / U	
Waste Acceptance	Check trucks and vans in dock and in yard: incoming loads must be placed in a Container Management Unit within 72 hours of arrival.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

Clean Harbors Kansas, LLC
DAILY INSPECTION LOG

FOR THE DAY OF : _____, _____

TIME: _____

INSPECTION UNIT	BUILDING B:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Storage	Two foot minimum aisle space between piles of drums.	A / U	
	Loading/unloading areas: check for evidence of spills or accumulated liquids.	A / U	
	Sump: Check for accumulations of liquids, contaminants, insecure gratings, or deterioration.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

Clean Hands Kansas, LLC
DAILY INSPECTION LOG

FOR THE DAY OF : _____, _____, _____

TIME: _____

INSPECTION UNIT	BUILDING I:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Storage	Two foot minimum aisle space between piles of drums.	A / U	
	Loading/unloading areas: check for evidence of spills or accumulated liquids.	A / U	
	Floors: check for accumulations of liquids or contaminants.	A / U	

INSPECTION UNIT	BUILDING J:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Container Storage	Two foot minimum aisle space between piles of drums.	A / U	
	Loading/unloading areas: check for evidence of spills or accumulated liquids.	A / U	
	Floors: check for accumulations of liquids or contaminants.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS *****

Clean Harbors Kansas, LLC
ANNUAL INSPECTION LOG

FOR THE PERIOD OF : _____ TO _____, _____

DATE INSPECTED: _____, _____, TIME: _____

INSPECTION UNIT	ANNUAL INSPECTION		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Fire Hydrants	Check for adequate water supply, and leaks or evidence of corrosion.	A / U	
Pumps and ancillary equipment	Check for leaks in accordance with method 21 referenced in 264.1063. Record in Subpart AA and BB monitoring record book.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS *****

Cleaeen H...rs Kansas, LLC
MONTHLY INSPECTION LOG

FOR THE MONTH OF : _____, _____, _____

DATE AND TIME: _____

INSPECTION UNIT	PERIMETER AND GENERAL FACILITY		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Facility Gates	Operate and make sure the warning signs are present and visible.	A / U	
Fences	Check for breaks or damage.	A / U	
	Check for erosion under fences.	A / U	
Access Roads	Check for facility debris, deterioration, and spills.	A / U	
Perimeter and Yards	Note any evidence of stressed vegetation or vegetation obscuring signs.	A / U	
Loud Speakers	Check for operability and clarity. Receive confirmation of both.	A / U	
Telephone System, Emergency Alarm	Check for operability and verify contingency plan contact list is present.	A / U	

INSPECTION UNIT/ AREA: G BUILDING: Break Room and Showers			
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Emergency Equipment	Check SCBA for cleanliness, air, operability.	A / U	
	Check first aid kit for stock and accessibility.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS *****

Cleaeen Hallsors Kansas, LLC
MONTHLY INSPECTION LOG

FOR THE MONTH OF : _____ , _____

DATE AND TIME: _____

INSPECTION UNIT	BUILDING D:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Telephone System, Emergency Alarm	Check for operability and verify contingency plan contact list is present.	A / U	
Spill Control Equipment	Check inventory and availability of absorbent, shovel, broom, and drum.	A / U	
PPE Storage	Inspect inventory for adequate supplies and operable condition.	A / U	
Fire Extinguishers	Check seals and pressure. Assure that appropriate type is hanging by signs/ contingency plan.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS *****

Cleaeen H~~and~~ers Kansas, LLC
MONTHLY INSPECTION LOG

FOR THE MONTH OF : _____ , _____

DATE AND TIME: _____

INSPECTION UNIT	PROCESSING AREA:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Light Liquid Pumps	Visually check all pumps, valves, flanges, pressure relief devices, and connections for evidence of leaks.	A / U	
	Check that monthly AA BB monitoring has been performed and recorded.	A / U	
Spill Control Equipment	Check for inventory and availability of absorbent, shovel, broom, and drum.	A / U	
Emergency Equipment	Check for cleanliness, proper location of contingency plan equipment, and operability of eyewash and shower stations.	A / U	
Fire Extinguishers	Check for seals and pressure. Assure that correct type is hanging by signs/ contingency plan.	A / U	
Warning Signs	Check that No Smoking Signs are visible on all four sides of the Processing building.	A / U	
Fire Suppression System	Check for deterioration.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS *****

Cleaeen H...rs Kansas, LLC
MONTHLY INSPECTION LOG

FOR THE MONTH OF : _____, _____

DATE AND TIME: _____

INSPECTION UNIT/ AREA: H BUILDING: Operations Shack			
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Emergency Equipment	Check for stock and accessibility of First Aid kit.	A / U	
Fire Extinguisher	Check for seals and pressure. Assure that correct type is hanging by signs/ contingency plan.	A / U	
Telephone System, Emergency Alarm	Check for operability and verify contingency plan contact list are present.	A / U	

INSPECTION UNIT BUILDING C:			
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Spill Control Equipment	Check for inventory and availability of absorbent, shovel, broom, and drum.	A / U	
Fire Extinguishers	Check for seals and pressure. Assure that correct type is hanging by signs per contingency plan.	A / U	
Telephone System, Emergency Alarm	Check for operability and verify Contingency Plan Contact List is present.	A / U	
Fire Suppression System	Check pressure gauges: water approx. 100PSI, air approx. 40-45PSI.	A / U	

INSPECTION UNIT Drum Dock:			
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Telephone System, Emergency Alarm	Check for operability and verify contingency plan contact list is present.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS *****

Cleaeen Harbors Kansas, LLC
MONTHLY INSPECTION LOG

FOR THE MONTH OF : _____, _____, _____

DATE AND TIME: _____

INSPECTION UNIT	WEST YARD		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Facility Gates	Check: should be locked, and warning signs present and visible.	A / U	
Access Roads	Check for facility debris, deterioration, and spills.	A / U	
Fences	Check for breaks or damage.	A / U	
	Check for erosion under fences.	A / U	
Perimeter and Yards	Note any evidence of stressed vegetation.	A / U	
INSPECTION UNIT	BUILDING B:		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Spill Control Equipment	Check for inventory of absorbent, soda ash, shovel, broom, and poly drum.	A / U	
Telephone System, Emergency Alarm	Check for operability and verify contingency plan contact list is present.	A / U	
Fire Extinguishers	Check seal and pressure. Assure appropriate type is hanging by sign/ contingency plan.	A / U	
INSPECTION UNIT/ AREA: A BUILDING: Laboratory			
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Emergency equipment	Check eyewash and shower stations for cleanliness, and accessibility.	A / U	
Fire Extinguishers	Check seal and pressure. Assure appropriate type is hanging by sign/ contingency plan.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS *****

Cleaeen Haulers Kansas, LLC
MONTHLY INSPECTION LOG

FOR THE MONTH OF : _____, _____, _____

DATE AND TIME: _____

INSPECTION UNIT	WEST YARD		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Telephone System, Emergency Alarm	Check for operability and verify contingency plan contact list is present.	A / U	
INSPECTION UNIT	BUILDING I		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Gates & Doors	Operate and make sure the warning signs are present and visible. Gates and doors should be locked unless in use.	A / U	
Fire Extinguishers	Check seal and pressure. Assure appropriate type is hanging by sign/ contingency plan.	A / U	
Access Roads and Yards	Check for facility debris, deterioration, and spills.	A / U	

INSPECTION UNIT	BUILDING J		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Gates & Doors	Operate and make sure the warning signs are present and visible. Gates and doors should be locked unless in use.	A / U	
Fire Extinguishers	Check seal and pressure. Assure appropriate type is hanging by sign/ contingency plan.	A / U	
Access Roads and Yards	Check for facility debris, deterioration, and spills.	A / U	

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS *****

**Clean Harbors Kansas, LLC
QUARTERLY INSPECTION LOG**

FOR THE PERIOD OF : _____ TO _____, _____

DATE INSPECTED: _____, TIME: _____

INSPECTION UNIT	BUILDING D AND PROCESSING TANKS		
INSPECTION ITEM	ELEMENT	STATUS	OBSERVATION/ REMEDIAL WORK ORDERS ISSUED
Overfill control system	Manually check operability of relief/detection valves. Record results on the following table.	A / U	

INSPECTION UNIT: Tanks																		
INSPECTION ITEM: Tank relief/detection valves																		
V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15A	V15B	V15C	V15D	V16
A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U	A/U

INSPECTION COMPLETED BY: _____

***** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS *****

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Acronym Table

Clean Harbors Kansas, LLC (CHK)
Emergency Response Coordinator (ERC)
City of Wichita Fire Department (CWFD)
Hazardous Materials Response Team (HMRT)
City of Wichita Police Department (CWPD)
National Response Center (NRC)
Reportable Quantity (RQ)
Local Emergency Planning Committee (LEPC)
Kansas Department of Health and Environment (KDHE)
National Fire Protection Association (NFPA)

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Personal Protective Equipment (PPE)
Self-Contained Breathing Equipment (SCBA)

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H-1 Introduction:

This Contingency/Emergency plan, when implemented, will minimize hazards to human health and the environment due to events such as fires, explosions, and/or releases of hazardous waste. This plan contains provisions addressing the requirements of 40 CFR Part 270 and 40 CFR Part 264. It is presented in a format designed to be useful for employees and response personnel during an emergency and for employee training purposes.

Copies of the plan will be kept at the facility and provided to the appropriate local authorities and emergency response agencies that may be called upon to provide emergency services. Amendment of the Emergency/Contingency Plan will be performed in accordance with the permit modification requirements of 40 CFR 270.42. The plan will be reviewed and may be amended, if necessary, whenever:

* the permit is revised;

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- * the plan may be improved by addressing shortcomings noted during practice or actual implementation;
- * the list of Emergency Response Coordinators (ERC) changes, or the list of emergency equipment changes;
- * the facility changes in a way that materially increases the potential for fires, explosions, releases of hazardous waste or hazardous waste constituents; or
- * the facility changes in a way that affects the implementation of the plan.

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H-2 General Information: 40 CFR 264.52, 264.53

H-2a Facility name:

Clean Harbors Kansas, LLC

H-2b Owner and Operator of Facility:

H-2b(1) Facility Operator:

Clean Harbors Kansas, LLC
2549 North New York Avenue
Wichita, Kansas 67219

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H-2b(2) Facility Owner(s):

Clean Harbors Kansas, LLC
2549 North New York Avenue
Wichita, Kansas 67219

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H-2b(3) Facility Telephone Number:

Office: 316/269-7400

Note: See Table H-1 for telephone numbers for
Emergency Response Coordinators.

H-2c Location:

The facility is located at 2549 North New York Avenue in
Wichita, Sedgwick County, Kansas, ZIP code 67219.

This address is in the Northeast quarter of the Southeast
quarter of Section 4, Township 27 South, Range 1 East.

H-2d Layout and Site Plan:

See Figure H.1, Emergency Equipment/Evacuation Routes,
Drawing 50-01-03-002. Note: Full size reference drawings
are available for review from the facility, and are included

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in Section Y of the Part B permit application, Referenced
Drawings.

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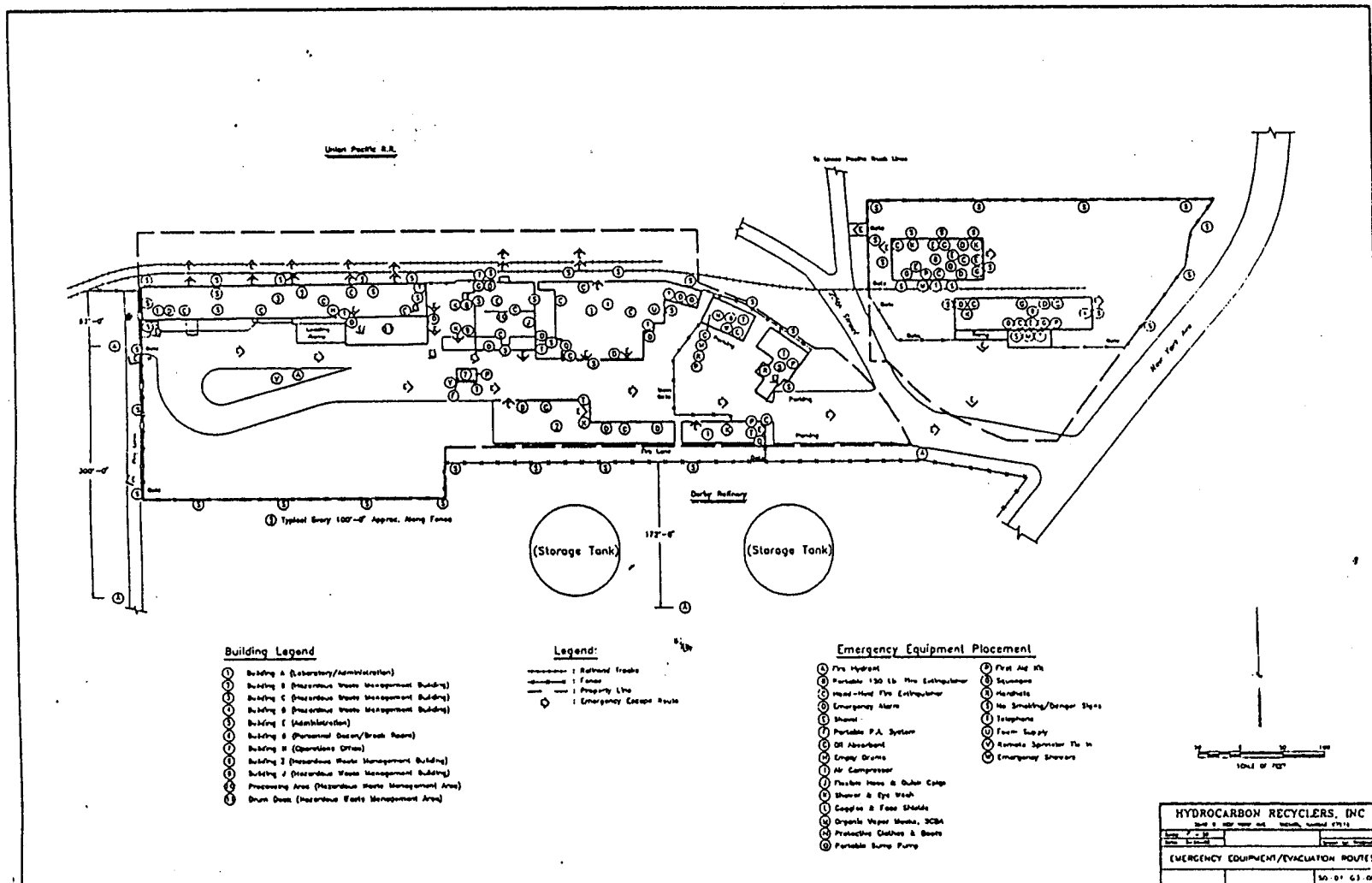


Figure H.1. Emergency Equipment/Evacuation Routes

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H-2e Description of Facility Operations:

CHK treats, recovers for recycling, and stores for subsequent off-site disposal, hazardous and nonhazardous wastes. Detailed operating and design descriptions are presented in the facility RCRA Permit Application (Parts A and B), which is available for review at the facility. Appendix H-A, List of EPA Waste Codes identifies RCRA regulated wastes which may be present in the facility. All RCRA regulated storage areas and treatment equipment will have secondary containment structures, which provide adequate run-on and run-off controls.

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H-3 Emergency Response Coordinators: 40 CFR 264.52(d) ,
264.55

The Emergency Response Coordinator (ERC) will be responsible for implementing the Contingency/Emergency plan as necessary in the event of an exigent situation. Each of the personnel listed in Table H-1, Emergency Response Coordinators, are qualified to assume the responsibilities of ERC. Each ERC will be familiar with all aspects of the facility's Contingency/Emergency Plan,

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operations and activities at the facility, the location and nature of wastes handled, the location of records within the facility, and the facility layout. An attempt will be made to contact the primary ERC in the event of an exigency; if the primary ERC is not available, the alternate ERC(s) will be called until one is reached.

The personnel listed in Table H-1, Emergency Response Coordinators, have full authority to commit all facility resources necessary to carry out the Contingency/Emergency Plan. A letter providing authorization for action by an ERC is provided in Appendix H-B, Emergency Response Coordinator Authorization.

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Table H-1

Emergency Response Coordinators

Primary Emergency Response Coordinator

Name: Brian Key

Ex. 6 PII

316/269-7400 (work)

Alternate Emergency Response Coordinator

Name: Rusty Dunn

Ex. 6 PII

316/269-7400 (work)

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H-4 Implementation:

This Plan will be implemented in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or waste constituents which may threaten human health and the environment. The ERC will be contacted if a fire, explosion, or release of hazardous waste might warrant implementation of this Plan. The ERC will determine whether implementation of the Contingency/Emergency Plan is necessary. Minor events which do not meet these criteria may be resolved with due regard to personnel health and safety without implementation of this plan. The following types of situations may be justification for implementing this plan.

H-4a Fires and/or Explosions:

- * Fire which may cause harm to human health.
- * Fire which may cause release of toxic fumes.

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- * Fire which may spread and could possibly ignite other nearby materials, either on-site or off-site, or could cause heat-induced explosions.
- * Use of fire suppressants which could result in contaminated run-off.
- * Explosion which has or could:
 - * result in danger from flying fragments or shock waves
 - * ignite other hazardous waste at the facility
 - * release toxic fumes.

H-4b Material Releases:

- * A release of toxic vapors or a significant volume of flammable liquids or vapors that could present a fire or vapor explosion hazard.
- * A release which could result in off-site soil contamination and/or surface water contamination.

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- * A release that could endanger human health or the environment for other reasons.

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H-5 Emergency Response Procedures:

H-5a Notification Procedures: 40 CFR 264.56(a) (2) ,
264.56(d)

In the event of an emergency which may require notification of outside authorities, the ERC or person designated by the ERC, shall call the appropriate emergency authorities; the KDHE will be notified within 24 hours or in as timely a manner as is possible of any events that result in implementation of this Emergency/Contingency Plan.

A telephone listing of these authorities is provided in Appendix H-C, Emergency Telephone List of Local Authorities. This telephone list will be posted at or nearby every telephone in the active portion of the facility; emergency telephone numbers are also available in office areas. The person initiating the call will provide as much of the following information as is available.

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- * Name of caller
- * Name of facility and telephone number
- * Address and location of Facility
- * Time and type of incident
- * Type and quantity of material(s) involved
- * Extent of injuries
- * Possible hazards to health and environment outside the facility

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The specific authorities to be notified are as follows.

- * The Sedgwick County Emergency Medical Service (EMS) will be called to respond to injuries to personnel as needed. Arrangements to treat personnel injuries have been made with Via Christi (St. Francis) Emergency Center.
- * In the event of a fire, explosion, or major spill, the City of Wichita Fire Department (CWFD) will be notified as needed. Arrangements have been made with the CWFD Hazardous Materials Response Team (HMRT); the HMRT is prepared to respond to a fire, explosion, or major spill at the CHK facility.
- * Similarly, for situations which may require response from the local police (i.e., evacuation), the City of Wichita Police Department (CWPD) will be notified. If the CWPD officials determine that additional assistance is needed, they may contact the Sedgwick County Sheriff, and/or the Kansas Highway Patrol.

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In the event that the ERC determines that the facility has had a release, fire, or explosion which could threaten human health or the environment outside the facility, the appropriate local emergency authorities will be notified. The ERC will be available to assist authorities in evaluating the situation regarding potential evacuation of an area outside of the facility. In addition, the National Response Center (NRC) will be notified in the event of a release of a Reportable Quantity (RQ) within a twenty-four (24) hour period.

If there is evidence of a Section 304 RQ release off site, the Local Emergency Planning Committee (LEPC) will be notified in accordance with said section of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 355).

The Kansas Department of Health and Environment (KDHE) will be notified of incidents through reporting as specified in Section H-9.

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H-5b Identification of Hazardous Materials:

40 CFR 264.56(b)

Whenever there is a release, fire, or explosion that may threaten human health or the environment, the ERC will immediately attempt to determine the character, exact source, amount, and areal extent of any released materials. Facility records, manifests, truck placards, etc. may be reviewed or inspected in an effort to identify the waste which may be involved in an exigent situation. A chemical analysis may be performed as necessary.

H-5c Hazard Assessment: 40 CFR 264.56(c)

The ERC will assess possible hazards to human health or the environment that may result from the release, fire or explosion. This assessment will consider both direct and indirect effects of the release, fire, or explosion, including:

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- * the possible effects of any toxic, irritating, or asphyxiating gases that are generated,
- * the possibility of fire spreading to other areas or causing a heat induced explosion,

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- * the risk to which facility personnel might be exposed by attempting to control a fire or release,
- * the effects of any hazardous surface water run-off from water or chemical agents used to fight fires, and
- * the potential of contaminating surface water or ground water from a spill or release of hazardous material.

The ERC will utilize available information to make this assessment, including the quantity of hazardous material involved, the rate of release, and the conditions surrounding the incident.

H-5d Control Procedures: 40 CFR 264.52(a), 264.56

In the event of an emergency, the necessary provisions of this Contingency/Emergency plan will be carried out as described below.

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The person who first discovers the incident, if it is safe to do so, will:

- * evacuate injured personnel,
- * Notify the Emergency Response Coordinator,
- * stop the spread of contamination (e.g., turn off a valve on a tank),
- * begin primary containment of liquids (i.e., dikes, sumps),
- * order the evacuation of other personnel from the area surrounding the incident, if necessary.

Once the ERC has been notified and is on the scene, he/she will then assess the situation further with the information that is available at this time. The ERC will immediately implement, as necessary, the following provisions of this Contingency/Emergency Plan (if not previously implemented).

- * Activate internal facility alarms or communication systems to notify all facility personnel of the incident.

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- * Identify the character, exact source, amount, and areal extent of any released material, if possible.

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- * Assess the possible hazards to human health or the environment. If the assessment indicates that there is a threat to human health or the environment outside the facility, or if there is evidence of a release of a RQ of hazardous material outside the facility, the ERC will implement the notification provisions of this Contingency/Emergency Plan per 40 CFR 264.56(d).

- * Coordinate the evacuation of personnel from immediate danger and coordinate first aid for injured personnel.

After the initial assessment is completed, the ERC will also, as necessary, implement the following procedures.

- * Coordinate the appropriate response procedures according to the incident. These procedures are presented in H-5e.

- * Initiate remedial actions to reduce the impact of the incident, as appropriate.

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- * Ensure that any waste generated during clean up is properly managed, and that no waste that may be incompatible with the

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released material is managed at the affected unit until the cleanup procedures are completed.

Additional responses may be warranted depending on the type of incident. The response procedures outlined in H-5e include the items which the ERC will consider in determining additional responses. This Plan serves as a guide rather than an unyielding set of procedures. The ERC will consider all options presented in this Plan and implement them as appropriate.

H-5e Emergency Response Procedures: 40 CFR 264.56

H-5e(1) Injuries to Personnel:

The following response actions are to be considered in the event that an injury occurs at the facility.

- * Based on the assessment of hazards to health which may be present, and if it is safe to do so, evacuate

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injured personnel from immediate danger using
appropriate Personal Protective Equipment (PPE).

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- * Perform CPR or artificial respiration, if needed, on the injured.
- * Notify Sedgwick County EMS according to notification procedures in Section H-5a.
- * Wash eyes, skin, etc. of injured personnel with water, if needed.
- * Treat injuries (see Figure H.2 for the location of first aid stations).
- * Establish emergency operations center.
- * Notify emergency operations center of incoming injured.
- * Dispatch site personnel to meet and direct incoming emergency vehicles.

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H-5e(2) Fires/Explosions:

During an emergency, the ERC will take all reasonable measures necessary to ensure that fires and explosions do not occur, recur, or spread to other hazardous waste at the facility.

The following response actions are to be considered if a fire and/or explosion should occur at the facility.

- * Establish an emergency operations center.
- * Extinguish any fire with fire extinguishers, if appropriate.
- * Call the Wichita Fire Department HMRT.
- * Evacuate site according to evacuation procedures in H-8.

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- * Notify Derby refinery and Union Pacific in the event of an evacuation.

- * Contact appropriate local agencies (see H-5 for notification procedures). The telephone list is posted at or near telephones or is available in office areas.

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- * Notify the KDHE.
- * Notify the National Response Center (NRC).
- * Dispatch site personnel to meet and direct incoming emergency vehicles.
- * Use water spray to cool tanks and containers that are exposed to heat as a result of the fire and/or explosion.
- * Protect other operations and vehicles from the incident. This includes, where applicable, stopping processes and operations, collecting and containing released wastes, removing or isolating containers, or moving vehicles.
- * Monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment.

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- * Stop the release of liquid by plugging, patching, or unloading any leaking tanks, pipes, or other equipment.

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- * Absorb liquid waste with absorbent materials and place in containers for management. Alternatively, larger spills can be pumped into containers or tanks.

H-5e(3) Releases:

During an emergency, the ERC will take all reasonable measures necessary to ensure that releases do not occur or recur. The following list contains response procedures to be considered in the event that a release of hazardous waste occurs.

- * Evacuate immediate area around incident.
- * Attempt to contain spills, if it is safe to do so.
- * Transfer leaking or ruptured container(s) to an overpack.
- * Establish emergency operations center.

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- * Determine the source of spill/release and shut down the affected unit to eliminate additional material release.

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- * Stop additional release of material to the environment and control surface leakage (e.g., pump the spilled material to tanks, transfer contents of tank to another tank, build containment dikes, transfer released materials to containers).
- * Clean up the spill using on-site equipment. As appropriate, these procedures will include soaking up liquid with absorbants; removal of standing liquids and/or waste from sumps, trenches, or low points of the floor; removal of material adhering to the surface; and steam cleaning and/or a water rinse.
- * If on-site personnel cannot contain/cleanup spill, contact appropriate state and local agencies (see Section H-5a for notification procedures).
- * Contact the Wichita Fire Department Hazardous Materials Response Team (HMRT) for RQ spills. The telephone list is posted next to all phones or in all offices in the facility (see Appendix H-B for phone numbers).

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- * Evacuate the facility (see H-8 for evacuation procedures and routes).
- * Within twenty-four (24) hours, or as soon as practicable after detection of the release, transfer sufficient waste from the tank or container, as necessary, to prevent further release of hazardous waste to the environment and to allow inspection of the unit. Any tank system from which there has been a leak or spill, or which is unfit for use, will be emptied and removed from service in accordance with 40 CFR 264.196.
- * After the release is controlled, and it is deemed safe to do so, response personnel will enter the affected building or area to assess damage and to determine the condition of waste containers, and other affected equipment.

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- * Stop the release of liquid into an area by plugging, patching, or unloading any leaking tanks, pipes, or other equipment.

- * Stop the release of liquid from its container by placing the leaking container into an overpack drum.

After an emergency, the ERC will initiate clean-up activities including the treatment, storage, and/or disposal of recovered waste, contaminated soil or surface water, or other material that results from a release, fire, or explosion at the facility.

H-5f Post-Emergency Activities: 40 CFR 264.56(h)(2), (i)

When operations of a waste management unit have been suspended due to an emergency resulting in implementation of this Plan, the unit and all equipment that was used in implementing the Plan will be assessed. Emergency equipment used in response to the emergency must be determined to be

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fit for reuse or replaced. The Regional Administrator (Region VII) and the KDHE will be notified (per 40 CFR 264.56) when the equipment is fit for use, prior to resuming operation of the affected unit.

The following actions will be considered when decontaminating emergency equipment.

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- * Provide adequate safety equipment and protective clothing for CHK personnel involved in remedial actions.
- * After a fire, explosion, or spill event is controlled and it is deemed safe to do so, enter the affected building or area to assess damage and determine the condition of waste containers, tanks, and other affected equipment.
- * Utilize on-site equipment for remedial actions (see H-6 for list of on-site equipment).
- * The Tanker Bay in the Processing Area may be used to decontaminate vehicles and equipment (i.e., trucks, portable pumps, etc.). The rinsate will be collected and managed as a hazardous waste.
- * Reusable PPE will be decontaminated, as appropriate. PPE which is unsuitable for reuse will be managed for disposal.

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- * Inspect the affected unit(s) and ensure that no waste that is incompatible with the released material is managed in the unit(s) until cleanup procedures are completed.

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- * Note in the operating record the time, date, and details of any incident that required implementing the contingency plan.

- * Submit, from CHK or the ERC, a written report of the incident to the Secretary within 15 days after the incident (see H-9 for the detailed reporting requirements).

- * Submit, from CHK or the ERC, a written report to the Secretary certifying that any emergency equipment involved in the incident or in the response and remediation are fit for their intended use.

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H-6 Emergency Equipment:

Emergency equipment is available at the facility for response to emergency situations. Emergency equipment maintained on site is summarized in Table H-2, Emergency Equipment List. This equipment will be accessible and will be regularly inspected and appropriately serviced. A description of this equipment is listed below.

H-6a Emergency Alarm and Communication Systems:

The facility is equipped with emergency alarm and communication systems to be used to notify and give emergency directions to both on-site and off-site personnel. These systems include:

- * a facility-wide alarm system (siren), which is capable of alerting personnel of emergencies;
- * a PA system which includes an intercom system accessible by telephones throughout the facility; and

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- * telephones, which are the primary means of communication within the facility and between the facility and the local emergency authorities.

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Table H-2

Emergency Equipment List

Equipment	Capabilities
Fire Extinguishers	Small fire control
Foam Supply	Fire control
Portable Sump Pump	Collection of spills/leaks
SCBA/Respirators	Minimize exposure of personnel
Personal Protective Equipment	Minimize exposure of personnel
Air Compressor	Supplied air line
Containers/Overpacks	Storage of collected material
Absorbants	Spill control
Squeegee, Shovel	Spill collection/containment
Portable P.A. System	Communication

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H-6b Fire extinguishers:

There are fire extinguishers located throughout the facility as required by the appropriate local fire code as well as the National Fire Protection Association (NFPA) code. The facility employs Type ABC fire extinguishers which are multipurpose combinations of the extinguisher types listed below.

- * Type A is capable of extinguishing fires involving ordinary combustible wastes such as wood, cloth, paper, rubber, and many plastics.
- * Type B is capable of extinguishing fires involving flammable liquids, oils, greases, tars, oil base paints, lacquers, and flammable gases.
- * Type C is capable of extinguishing fires involving energized electrical equipment.

In Buildings I and J, small containers of dry powder fire extinguisher will be kept on hand in any area where open

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containers are handled (i.e., Areas I300 and J200). In addition, Buildings I and J will be provided with a foam fire suppression system instead of the water sprinklers provided in other areas of the plant.

H-6c Fire hydrants:

Fire hydrants are available for fire control. They receive their water supply from the City of Wichita Department of Water.

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H-6d First Aid Stations:

Cabinets of first aid and medical supplies such as bandages, tape, antibacterial ointments, pain relievers, splints, local and topical anesthetics and eyewash bottles and solution are located throughout the facility (see Figure H.1 for first aid station locations).

H-6e Personal Protective Equipment (PPE):

The PPE listed below is available to facility personnel; PPE is issued as appropriate.

- * Chemically resistant garments
 - * Chemically resistant gloves
 - * Chemically resistant boots
 - * Coveralls
 - * Steel-toed boots
 - * Hard hats
 - * Face shields and protective eyeglasses
 - * Air purifying respirators
- Self-contained air supply (as described below)

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H-6f Safety Showers and Eye Wash Stations:

There are two (2) stations located in the facility. They are designed to meet OSHA requirements. Locations for these stations are provided on Figure H.1, Emergency Equipment/Evacuation Routes.

H-6g Self-Contained Breathing Apparatus (SCBA):

SCBAs are available to provide breathing air, which may be needed by some personnel in the event of an emergency situation. Supplied air will be provided in Buildings I and J.

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H-6h Other Emergency Response Equipment:

- * Portable Pumps - Pumps which handle liquids and sludges are available for recovering any released contaminants.
- * Stabilizing agents - Stabilizing materials will be stored in Building B to assist in spill release containment and cleanup.
- * Overpack drums - Overpack drums will be available in each Container Storage Building where containerized hazardous waste is stored. Leaking drums may be placed inside these overpack drums for containment.
- * Site Equipment - Mobile equipment may be used to respond to hazardous waste releases. Facility equipment typically maintained includes industrial trucks (forklifts) and a multi-purpose vehicle (Bobcat).

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H-7 Coordination Agreements: 40 CFR 264.52(c), 264.37

H-7a Emergency Authorities:

Coordination agreements with local emergency authorities have been negotiated; letters to these authorities are presented in Appendix H-D, Coordination Agreement Letters in compliance with 40 CFR 264.37. Copies of this plan will be submitted to the organizations identified in Appendix H-D; amendments to the plan will be forwarded to these authorities as required. Procedures for notification of emergency authorities are described in Section H-5a.

H-7b Local Contractors:

In the event that on-site cleanup of a spill or release is required, CHK has limited equipment on-site to respond. Outside contractors may be used as needed to respond to a spill or release. In addition, Clean Harbors has a Remedial Services Division which is capable of responding to hazardous waste spills and/or releases.

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H-8 Evacuation Plan: 40 CFR 264.52(f)

In each exigent situation, the ERC will determine whether a facility evacuation is necessary to protect the health and safety of facility personnel. The following criteria will be considered in making this decision.

H-8a Criteria for Evacuation:

- * Fire and/or explosion which releases vapors or fumes which will endanger the health of facility personnel.
- * Fire and/or explosion which could ignite other hazardous wastes and, in turn, endanger facility personnel.
- * Spill and/or release which releases vapors or fumes which will endanger the health of facility personnel.

If the ERC determines that a site evacuation is necessary, the following procedures will be followed to implement the evacuation.

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- * The ERC or person designated by the ERC shall activate the appropriate alarms/sirens indicating that a site evacuation is required. If the alarm/siren system is not functioning, the intercom system will be used.
- * All facility personnel shall meet at the appropriate evacuation point(s).
- * The ERC or person(s) designated by the ERC will perform a count of all personnel at the evacuation point(s).
- * If any persons are not accounted for, the ERC will coordinate efforts to search the appropriate areas to locate the missing personnel.
- * Personnel shall evacuate the site according to the evacuation routes shown on Figure H.1. All personnel will be informed of these procedures and routes in their initial training program.

Personnel may return to the site when allowed to do so by the ERC.

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H-9 Required Reports: 40 CFR 264.56(j)

H-9a Reports to the Secretary:

If the Contingency Plan is implemented per 40 CFR 264.51(b), CHK will submit a written report to the Secretary within 15 days after the incident in compliance with 40 CFR 264.56(j).

The report will include the following information.

- * Name, address, and telephone number of the owner or operator
- * Name, address, and telephone number of the facility
- * Date, time, and type of incident (e.g., fire, explosion)
- * Name and quantity of material(s) involved
- * The extent of injuries, if any
- * An assessment of actual or potential hazards to human health or the environment, where this is applicable
- * Estimated quantity and disposition of recovered material that resulted from the incident

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- * Notification that the equipment used in response to the
incident is fit for its intended use

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H-9b SARA Reporting:

As soon as practicable after a release which requires notice under the Superfund Amendments and Reauthorization Act (SARA), CHK or the ERC will provide a written report to the LEPC as required by regulations set forth under that Act.

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Appendix H-A - List of EPA Waste Codes

Appendix H-A

List of EPA Waste Codes

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Clean Harbors Kansas, LLC**Waste List**EPA Hazardous
Waste Number:

Hazardous Waste/Constituent:

Hazardous Waste by Characteristic:

D001 (I)	Ignitability
D002 (C)	Corrosivity
D003 (R)	Reactivity
D004 (E)	Arsenic
D005 (E)	Barium
D006 (E)	Cadmium
D007 (E)	Chromium
D008 (E)	Lead
D009 (E)	Mercury
D010 (E)	Selenium
D011 (E)	Silver
D012 (E)	Endrin (1,2,3,4,10,10-hexachloro-1,7 epoxy-1,4,4a,5,6,;7,8,8a-octahydro-1,4 endo,endo-5,8-dimeth-ano-naphthalene)
D013 (E)	Lindane (1,2,3,4,5,6, hexa-chloro-cyclohexane, gamma isomer
D014 (E)	Methoxychlor (1,1,1-Trichloro- 2,2-bis [p-methoxyphenyl]ethane
D015 (E)	Toxaphene (C ₁₀ H ₁₀ Cl ₈ , technical chlorinated camphene, 67-69 percent chlorine)
D016 (E)	2,4-D (2,4 dichlorophenoxyacetic acid)
D017 (E)	2,4,5-TP Silvex (2,4,5-trichloro-phenoxypropionic acid)
D018 (E)	Benzene
D019 (E)	Carbon tetrachloride
D020 (E)	Chlordane
D021 (E)	Chlorobenzene
D022 (E)	Choroform
D023 (E)	o-Cresol
D024 (E)	m-Cresol
D025 (E)	p-Cresol
D026 (E)	Cresol
D027 (E)	1,4-Dichlorobenzene
D028 (E)	1,2-Dichloroethane
D029 (E)	1,1-Dichloroethylene

Basis for listing or class of hazardous waste:

(I)	Ignitable	Toxicity Characteristic Waste (E)
(C)	Corrosive	Acute Hazardous Waste (H)
(R)	Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous
Waste Number:

Hazardous Waste/Constituent:

D030 (E)	2,4-Dinitrotoluene
D031 (E)	Heptachlor (and its hydroxide)
D032 (E)	Hexachlorobenzene
D033 (E)	Hexachloro-1,3-butadiene
D034 (E)	Hexachloroethane
D035 (E)	Methyl ethyl ketone
D036 (E)	Nitrobenzene
D037 (E)	Pentachlorophenol
D038 (E)	Pyridine
D039 (E)	Tetrachloroethylene
D040 (E)	Trichloroethylene
D041 (E)	2,4,5-Trichlorophenol
D042 (E)	2,4,6-Trichlorophenol
D043 (E)	Vinyl Chloride

Basis for listing or class of hazardous waste:

(I)	Ignitable	Toxicity Characteristic Waste (E)
(C)	Corrosive	Acute Hazardous Waste (H)
(R)	Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

Hazardous Wastes from Non-specific Sources:

- F001 (T) The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004 and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
- F002 (T) The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
- F003 (I) The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one

Basis for listing or class of hazardous waste:

- | | |
|---------------|-----------------------------------|
| (I) Ignitable | Toxicity Characteristic Waste (E) |
| (C) Corrosive | Acute Hazardous Waste (H) |
| (R) Reactive | Toxic Waste (T) |

Clean Harbors Kansas, LLC

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EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

or more of the above non-halogenated solvents, and, a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

F004 (T)

The following spent non-halogenated solvents: Cresols and cresylic acid, nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

F005 (I,T)

The following spent non-halogenated solvents: Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, and pyridine; benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

F006 (T)

Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc

Basis for listing or class of hazardous waste:

(I) Ignitable

Toxicity Characteristic Waste (E)

(C) Corrosive

Acute Hazardous Waste (H)

(R) Reactive

Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

	and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.
F007 (R,T)	Spent cyanide plating bath solutions from electroplating operations
F008 (R,T)	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.
F009 (R,T)	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.
F010 (R,T)	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.
F011 (R,T)	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations
F012 (T)	Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process.
F019 (T)	Wastewater treatment sludges from the chemical conversion coating of aluminum.
F024 (T)	Process wastes, including but not limited to distillation residues, heavy ends, tars, and reactor clean-out wastes from the production of chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

(This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in 261.31 or 261.32).

F025 (T)

Condensed light ends, spent filters and filter aids and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five with varying amounts and positions of chlorine substitution.

F032 (T)

Wastewaters, process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with ' 261.35 of this chapter and where the generator does not resume or initiate use of chlorophenolic formulations).

This listing does not include K001 bottom sediments sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.

F034 (T)

Wastewaters, process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

pentachlorophenol.

F035 (T)

Wastewaters, process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.

F037 (T)

Petroleum refinery primary oil/water/solids separation sludge--Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include but are not limited to, those generated in: oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in ' 261.31(b)(2) (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing.

F038 (T)

Petroleum refinery secondary (emulsified)

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC
Waste List

EPA Hazardous
Waste Number:

Hazardous Waste/Constituent:

oil/water/solids separation sludge--Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air flotation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in ' 261.31(b)(2) (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and F037, K048, and K051 wastes are not included in this listing.

F039 ¹

Leachate resulting from the treatment, storage, or disposal of wastes classified by more than one waste code under Subpart D, or from a mixture of wastes classified under Subparts C and D of this part. (Leachate resulting from the management of one or more of the following EPA Hazardous Wastes and no other hazardous wastes retains its hazardous waste code(s): F020, F021, F022, F023, F026, F027, and/or F028).

¹All constituents for which treatment standards are specified for multi-source leachate (wastewaters and non-wastewaters) under 40 CFR 268.43(a), Table CCW.

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

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Waste List

EPA Hazardous
Waste Number:

Hazardous Waste/Constituent:

Hazardous Wastes from Specific Sources:

K001 (T)	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.
K002 (T)	Wastewater treatment sludge from the production of chrome yellow and orange pigments.
K003 (T)	Wastewater treatment sludge from the production of molybdate orange pigments.
K004 (T)	Wastewater treatment sludge from the production of zinc yellow pigments.
K005 (T)	Wastewater treatment sludge from the production of chrome green pigments.
K006 (T)	Wastewater treatment sludge from the production of chrome oxide green pigments.
K007 (T)	Wastewater treatment sludge from the production of iron blue pigments.
K008 (T)	Oven residue from the production of chrome oxide green pigments.
K009 (T)	Distillation bottoms from the production of acetaldehyde from ethylene.
K010 (T)	Distillation side cuts from the production of acetaldehyde from ethylene.
K011 (R,T)	Bottom stream from the wastewater stripper in the production of acrylonitrile.

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

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Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

K013 (R,T)	Bottom stream from the acetonitrile column in the production of acrylonitrile.
K014 (T)	Bottoms from the acetonitrile purification column in the production of acrylonitrile.
K015 (T)	Still bottoms from the distillation of benzyl chloride.
K016 (T)	Heavy ends or distillation residues from the production of carbon tetrachloride.
K017 (T)	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.
K018 (T)	Heavy ends from the fractionation column in ethyl chloride production.
K019 (T)	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.
K020 (T)	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.
K021 (T)	Aqueous spent antimony catalyst waste from fluoromethanes production.
K022 (T)	Distillation bottom tars from the production of phenol/acetone from cumene.
K023 (T)	Distillation light ends from the production of phthalic anhydride from naphthalene.
K024 (T)	Distillation bottoms from the production of phthalic anhydride from naphthalene.

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

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Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

K025 (T)	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.
K026 (T)	Stripping still tails from the production of methy ethyl pyridines.
K027 (R,T)	Centrifuge and distillation residues from toluene diisocyanate production.
K028 (T)	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.
K029 (T)	Waste from the product steam stripper in the production of 1,1,1-trichloroethane.
K030 (T)	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene.
K031 (T)	By-product salts generated in the production of MSMA and cacodylic acid.
K032 (T)	Wastewater treatment sludge from the production of chlordane.
K033 (T)	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.
K034 (T)	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.
K035 (T)	Wastewater treatment sludges generated in the production of creosote.

Basis for listing or class of hazardous waste:

(I) Ignitable

Toxicity Characteristic Waste (E)

(C) Corrosive

Acute Hazardous Waste (H)

(R) Reactive

Toxic Waste (T)

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EPA Hazardous
Waste Number:

Hazardous Waste/Constituent:

K036 (T)	Still bottoms from toluene reclamation distillation in the production of disulfoton.
K037 (T)	Wastewater treatment sludges from the production of disulfoton.
K038 (T)	Wastewater from the washing and stripping of phorate production.
K039 (T)	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.
K040 (T)	Wastewater treatment sludge from the production of phorate.
K041 (T)	Wastewater treatment sludge from the production of toxaphene.
K042 (T)	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.
K043 (T)	2,6-Dichlorophenol waste from the production of 2,4-D.
K044 (R)	Wastewater treatment sludges from the manufacturing and processing of explosives.
K045 (R)	Spent carbon from the treatment of wastewater containing explosives.
K046 (T)	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.

Basis for listing or class of hazardous waste:	
(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

K047 (R)	Pink/red water from TNT operations.
K048 (T)	Dissolved air flotation (DAF) float from the petroleum refining industry.
K049 (T)	Slop oil emulsion solids from the petroleum refining industry.
K050 (T)	Heat exchanger bundle cleaning sludge from the petroleum refining industry.
K051 (T)	API separator sludge from the petroleum refining industry.
K052 (T)	Tank bottoms (leaded) from the petroleum refining industry.
K060 (T)	Ammonia still lime sludge from coking operations.
K061 (T)	Emission control dust/sludge from the primary production of steel in electric furnaces.
K062 (C,T)	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).
K064 (T)	Acid plant blowdown slurry/sludge resulting from the thickening of blowdown slurry from primary copper production.
K065 (T)	Surface impoundment solids contained in and dredged from surface impoundments at primary lead smelting facilities
K066 (T)	Sludge from treatment of process wastewater

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

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Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

and/or acid plant blowdown from primary zinc production.

- K069 (T) Emission control dust/sludge from secondary lead smelting. (Note: This listing is stayed administratively for sludge generated from secondary acid scrubber systems. The stay will remain in effect until further administrative action is taken. If EPA takes further action effecting this stay, EPA will publish a notice of the action in the Federal Register.)
- K071 (T) Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.
- K073 (T) Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.
- K083 (T) Distillation bottoms from aniline production.
- K084 (T) Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.
- K085 (T) Distillation or fractionation column bottoms from the production of chlorobenzenes.
- K086 (T) Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.

Basis for listing or class of hazardous waste:

- | | |
|---------------|-----------------------------------|
| (I) Ignitable | Toxicity Characteristic Waste (E) |
| (C) Corrosive | Acute Hazardous Waste (H) |
| (R) Reactive | Toxic Waste (T) |
-

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

K087 (T)	Decanter tank tar sludge from coking operations.
K088 (T)	Spent potliners from primary aluminum reduction.
K090 (T)	Emission control dust or sludge from ferrochromiumsilicon production.
K091 (T)	Emission control dust or sludge from ferrochromium production.
K093 (T)	Distillation light ends from the production of phthalic anhydride from ortho-xylene.
K094 (T)	Distillation bottoms from the production of phthalic anhydride from ortho-xylene.
K095 (T)	Distillation bottoms from the production of 1,1,1-trichloroethane.
K096 (T)	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.
K097 (T)	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.
K098 (T)	Untreated process wastewater from the production of toxaphene.
K099 (T)	Untreated wastewater from the production of 2,4-D.
K100 (T)	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC
Waste List

EPA Hazardous
Waste Number:

Hazardous Waste/Constituent:

K101 (T)	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.
K102 (T)	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.
K103 (T)	Process residues from aniline extraction from the production of aniline.
K104 (T)	Combined wastewater streams generated from nitrobenzene/aniline production.
K105 (T)	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.
K106 (T)	Wastewater treatment sludge from the mercury cell process in chlorine production.
K107 (C,T)	Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazines.
K108 (I,T)	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.
K109 (T)	Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic

Basis for listing or class of hazardous waste:	
(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

acid

hydrazides.

K110 (T)

Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic

acid

hydrazides.

K111(C,T) Product washwaters from the production of dinitrotoluene via nitration of toluene.

K112 (T)

Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.

K113 (T)

Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.

K114 (T)

Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.

K115 (T)

Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.

K116 (T)

Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.

K117 (T)

Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via

Basis for listing or class of hazardous waste:

(I) Ignitable

Toxicity Characteristic Waste (E)

(C) Corrosive

Acute Hazardous Waste (H)

(R) Reactive

Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

bromination of ethene.

K118 (T)	Spent adsorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.
K123 (T)	Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salt.
K124 (T,C)	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts.
K125 (T,C)	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts.
K126 (T)	Baghouse dust and floor sweepings in milling and packaging operations from production or formulation of ethylenebisdithiocarbamic acid and its salts.
K131 (C,T)	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide.
K132 (T)	Spent absorbent and wastewater separator solids from the production of methyl bromide.
K136 (T)	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.
K141 (T)	Process residues from the recovery of coal

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

tar, including, but not limited to, collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludges from coking operations).

K142 (T) Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal.

K143 (T) Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.

K144 (T) Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal.

K145 (T) Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.

K147 (T) Tar storage tank residues from coal tar refining.

K148 (T) Residues from coal tar distillation, including, but not limited to, still bottoms.

K149 (T) Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

functional groups. (This waste does not include still bottoms from the distillation of benzyl chloride).

K150 (T)

Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

- K151 (T) Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.
- K156 (T) Organic Waste (including heavy ends, still bottoms, light ends, spent solvents, filters, and decantates) from the production of carbamates and carbamoyl oximes.
- K157 (T) Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes.
- K158 (T) Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes.
- K159 (T) Organics from the treatment of thiocarbamate wastes.
- K160 (T) Solids (including filter wastes, separation solids, and spent catalysts) from the production of thiocarbamates and solids from the treatment of thiocarbamate wastes.
- K161 (T) Purification solids (including filtration,

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous
Waste Number:

Hazardous Waste/Constituent:

evaporation, and centrifugation solids), bag house dust and floor sweepings from the production of dithiocarbamate acids and their salts. (This listing does not include K125 or K126.)

- K169 (T) Crude oil tank sediment from petroleum refining operations.
- K170 (T) Clarified slurry oil sediment from petroleum refining operations.
- K171 (R,T) Spent hydrotreating catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media).
- K172 (R,T) Spent hydrotreating catalyst from petroleum refining operations.

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

Discarded Commercial Chemical Products,
Off-Specification Species, Container Residues,
and Spill Residues Thereof:

P001 (H)	Warfarin, & salts, when present at concentrations greater than 0.3%.
P002 (H)	1-Acetyl-2-thiourea
P003 (H)	Acrolein
P004 (H)	Aldrin
P005 (H)	Allyl alcohol
P006 (R,T)	Aluminum phosphide
P007 (H)	5-(Aminomethyl)-3-isoxazolol
P008 (H)	4-Aminopyridine
P009 (R)	Ammonium picrate
P010 (T)	Arsenic acid H_3AsO_4
P011 (T)	Arsenic pentoxide
P012 (T)	Arsenic trioxide
P013 (H)	Barium cyanide
P014 (T)	Benzenethiol
P015 (H)	Beryllium
P016 (H)	Methane, oxybis[chloro-
P017 (T)	Bromoacetone
P018 (H)	Brucine
P020 (H)	Dinoseb
P021 (H)	Calcium cyanide
P022 (T)	Carbon disulfide
P023 (H)	Chloroacetaldehyde
P024 (H)	p-Chloroaniline
P026 (H)	1-(o-Chlorophenyl)thiourea
P027 (H)	3-Chloropropionitrile
P028 (H)	Benzyl chloride
P029 (H)	Copper cyanide
P030 (T)	Cyanides (soluble cyanide salts) not otherwise specified.
P031 (H)	Cyanogen
P033 (H)	Cyanaogen chloride
P034 (T)	2-Cyclohexyl-4,6-dinitrophenol

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

P036 (H)	Dichlorophenylarsine
P037 (H)	Dieldrin
P038 (T)	Diethylarsine
P039 (T)	Disulfoton
P040 (H)	O,O-Diethyl O-pyrazinyl phosphorothioate.
P041 (H)	Diethyl-p-nitrophenyl phosphate
P042 (H)	Epinephrine
P043 (H)	Diisopropylfluorophosphate (DFP)
P044 (T)	Dimethoate
P045 (H)	Thiofanox
P046 (T)	Benzeneethanamine, alpha,alpha-dimethyl-
P047 (H)	4,6-Dinitro-o-cresol, and salts
P048 (H)	2,4-Dinitrophenol
P049 (H)	Dithiobiuret
P050 (H)	Endosulfan
P051 (H)	Endrin
P054 (H)	Aziridine
P056 (H)	Fluorine
P057 (H)	Fluoroacetamide
P058 (H)	Fluoroacetic acid, sodium salt
P059 (H)	Heptachlor
P060 (H)	Isodrin
P062 (H)	Hexaethyl tetraphosphate
P063 (H)	Hydrogen cyanide
P064 (H)	Methyl isocyanate
P065 (R,T)	Mercury fulminate
P066 (H)	Methomyl
P067 (H)	1,2-Propylenimine
P068 (H)	Methyl hydrazine
P069 (H)	2-Methylactonitrile
P070 (H)	Aldicarb
P071 (H)	Methyl parathion
P072 (H)	alpha-Naphthylthiourea
P073 (H)	Nickel carbonyl
P074 (H)	Nickel cyanide
P075 (T)	Nicotine, and salts
P076 (T)	Nitric oxide

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous
Waste Number:

Hazardous Waste/Constituent:

P077 (T)	p-Nitroaniline
P078 (H)	Nitrogen dioxide
P081 (R, T)	Nitroglycerine (R)
P082 (H)	N-Nitrosodimethylamine
P084 (H)	N-Nitrosomethylvinylamine
P085 (H)	Octamethylpyrophosphoramidate
P087 (H)	Osmium tetroxide
P088 (H)	Endothall
P089 (T)	Parathion
P092 (H)	Phenylmercury acetate
P093 (H)	Phenylthiourea
P094 (T)	Phorate
P095 (T)	Phosgene
P096 (H)	Phosphine
P097 (H)	Famphur
P098 (H)	Potassium cyanide
P099 (H)	Potassium silver cyanide
P101 (H)	Propanenitrile
P102 (H)	Propargyl alcohol
P103 (H)	Selenourea
P104 (H)	Silver cyanide
P105 (H)	Sodium azide
P106 (H)	Sodium cyanide
P108 (T)	Strychnine and salts
P109 (H)	Tetraethyldithiopyrophosphate
P110 (H)	Tetraethyl lead
P111 (H)	Tetraethyl pyrophosphate
P112 (R)	Tetranitromethane
P113 (H)	Thallic oxide
P114 (H)	Thallium(I) selenite
P115 (H)	Thallium(I) sulfate
P116 (H)	Thiosemicarbazide
P118 (H)	Trichloromethanethiol
P119 (H)	Vanadic acid, ammonium salt
P120 (H)	Vanadium pentoxide
P121 (H)	Zinc cyanide
P122 (R, T)	Zinc phosphide Zn_3P_2 when present at

Basis for listing or class of hazardous waste:

(I)	Ignitable	Toxicity Characteristic Waste (E)
(C)	Corrosive	Acute Hazardous Waste (H)
(R)	Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

	concentrations greater than 10%
P123 (H)	Toxaphene
P127	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl,methylcarbamate (Carbofuran)
P128	Phenol, 4-(dimethylamino)-3,5-dimethyl-, methylcarbamate (ester) (Mexacarbate)
P185	1,3-Dithiolane-2-carboxaldehyde, 2,4-dimethyl, O-[(methylamino)carbonyl]oxime (Tirpate)
P188	Benzoic acid, 2-hydroxy, compd. with (3aS-cis)-1,2,3,3a,8,8a-hexahydro- 1,3a,8-trimethylpyrrolo[2,3-b]indol-5-yl methylcarbamate ester (1:1) (Physostigmine salicylate)
P189	Carbamic acid, [(dibutylamino)thio]methyl-, 2,3-dihydro-2,2-dimethyl-7-benzofuranyl ester (Carbosulfan)
P190	Carbamic acid, methyl-, 3-methylphenyl ester (Metolcarb)
P191	Carbamic acid, dimethyl-, 1-[(dimethylamino)carbonyl]-5-methyl-1H-pyrazol-3-yl ester (Dimetilan)
P192	Carbamic acid, dimethyl-, 3-methyl-1-(1-methylethyl)-1H-pyrazol-5-yl ester (Isolan)
P194	Ethanimidothioc acid, 2-(dimethylamino)-N-[[(methylamino)carbonyl]oxy]-2-oxo, methyl ester (Oxamyl)
P196	Manganese, bis(dimethylcarbamoedithioato-S,S')-(Manganese dimethyldithiocarbamate)
P197	Methanimidamide, N,N-dimethyl-N'-[2- methyl-4-[[(methylamino)carbonyl]oxy}phenyl]- (Formparanate)
P198	Methanimidamide, N,N-dimethyl-N'-[3-[[(methylamino)carbonyl]oxy}phenyl]-, monohydrochloride (Formetanate hydrochloride)
P199	Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate (Methiocarb)
P201	Phenol, 3-methyl-5-(1-methylethyl)-,

Basis for listing or class of hazardous waste:

(I)	Ignitable	Toxicity Characteristic Waste (E)
(C)	Corrosive	Acute Hazardous Waste (H)
(R)	Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

P202	methylcarbamate (Promecarb) Phenol, 3-(1-methylethyl), methylcarbamate (Hercules AC-5727)
P203	Propanal, 2-methy-2-(methylsulfonyl)-, O- [(methylamino)carbonyl] oxime (Aldicarb sulfone)
P204	Pyrrolo(2,3-b)indol-5-ol, 1,2,3,3a,8,8a-hexahydro- 1,3a,8-trimethyl, methylcarbamate (ester), (3aS- cis)- (Physostigmine)
P205	Zinc, bis(dimethylcarbamodithioato-S,S')-, (Ziram)

Basis for listing or class of hazardous waste:

(I)	Ignitable	Toxicity Characteristic Waste (E)
(C)	Corrosive	Acute Hazardous Waste (H)
(R)	Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

Commercial Chemical Products, Manufacturing
Chemical Intermediates, or Off-Specification
Commercial Chemical Products:

U001 (I)	Ethanal
U002 (I)	Acetone
U003 (I,T)	Acetonitrile
U004 (T)	Acetophenone
U005 (T)	2-Acetylaminofluorene
U006 (C,R,T)	Acetyl chloride
U007 (T)	Acrylamide
U008 (I)	Acrylic acid
U009 (T)	Acrylonitrile
U010 (T)	Mitomycin C
U011 (T)	Amitrole
U012 (I,T)	Aniline
U014 (T)	Auramine
U015 (T)	Azaserine
U016 (T)	Benz[c]acridine
U017 (T)	Benzal chloride
U018 (T)	Benz[a]anthracene
U019 (I,T)	Benzene
U020 (C,R)	Benzenesulfonyl chloride
U021 (T)	Benzidine
U022 (T)	Benzo[a]pyrene
U023 (C,R,T)	Benzotrichloride
U024 (T)	Dichloromethoxy ethane
U025 (T)	Dichloroethyl ether
U026 (T)	Chlornaphazin
U027 (T)	Dichloroisopropyl ether
U028 (T)	Diethylhexyl phthalate
U029 (T)	Methyl bromide
U030 (T)	Benzene, 1-bromo-4-phenoxy-
U031 (I)	n-Butyl alcohol
U032 (T)	Calcium chromate
U033 (R,T)	Carbon oxyfluoride
U034 (T)	Chloral

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

U035 (T)	Chlorambucil
U036 (T)	Chlordane, alpha & gamma isomers
U037 (T)	Chlorobenzene
U038 (T)	Chlorobenzilate
U039 (T)	p-Chloro-m-cresol
U041 (T)	Epichlorohydrin
U042 (T)	2-Chloroethyl vinyl ether
U043 (T)	Vinyl chloride
U044 (T)	Chloroform
U045 (I,T)	Methyl chloride
U046 (T)	Chloromethyl methyl ether
U047 (T)	beta-Chloronaphthalene
U048 (T)	o-Chlorophenol
U049 (T)	Benzenamine, 4-chloro-2-methyl-, hydrochloride
U050 (T)	Chrysene
U051 (T)	Creosote
U052 (T)	Cresol (Cresylic Acid)
U053 (T)	Crotonaldehyde
U055 (I)	Cumene
U056 (I)	Cyclohexane
U057 (I)	Cyclohexanone
U058 (T)	Chclophosphamide
U059 (T)	Daunomycin
U060 (T)	DDD
U061 (T)	DDT
U062 (T)	Diallate
U063 (T)	Dibenz[a,h]anthracene
U064 (T)	Dibenzo[a,i]pyrene
U066 (T)	1,2-Dibromo-3-chloropropane
U067 (T)	Ethylene dibromide
U068 (T)	Methylene bromide
U069 (T)	Dibutyl phthalate
U070 (T)	o-Dichlorobenzene
U071 (T)	m-Dichlorobenzene
U072 (T)	p-Dichlorobenzene
U073 (T)	3,3'Dichlorobenzidine
U074 (I,T)	1,4-Dichloro-2-butene

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

U075	(T)	Dichlorodifluoromethane
U076	(T)	Ethylidene dichloride
U077	(T)	Ethylene dichloride
U078	(T)	1,1-Dichloroethylene
U079	(T)	1,2-Dichloroethylene
U080	(T)	Methylene chloride
U081	(T)	2,4-Dichlorophenol
U082	(T)	2,6-Dichlorophenol
U083	(T)	Propylene dichloride
U084	(T)	1,3-Dichloropropene
U085	(I,T)	1,2:3,4-Diepoxybutane
U086	(T)	N,N-Diethylhydrazine
U087	(T)	O,O-Diethyl S-methyl dithiophosphate
U088	(T)	Diethyl phthalate
U089	(T)	Diethylstilbesterol
U090	(T)	Dihydrosafrole
U091	(T)	3,3'-Dimethoxybenzidine
U092	(I)	Dimethylamine
U093	(T)	p-Dimethylaminoazobenzene
U094	(T)	7,12-Dimethylbenz[a]anthracene
U095	(T)	3,3'-Dimethylbenzidine
U096	(R)	alpha,alpha-Dimethylbenzylhydroperoxide
U097	(T)	Dimethylcarbamoyl chloride
U098	(T)	1,1-Dimethylhydrazine
U099	(T)	1,2-Dimethylhydrazine
U101	(T)	2,4-Dimethylphenol
U102	(T)	Dimethyl phthalate
U103	(T)	Dimethyl sulfate
U105	(T)	2,4-Dinitrotoluene
U106	(T)	2,6-Dinitrotoluene
U107	(T)	Di-n-octyl phthalate
U108	(T)	1,4-Dioxane
U109	(T)	1,2-Diphenylhydrazine
U110	(I)	Dipropylamine
U111	(T)	Di-n-propylnitrosamine
U112	(I)	Ethyl acetate
U113	(I)	Ethyl acrylate

Basis for listing or class of hazardous waste:

(I)	Ignitable	Toxicity Characteristic Waste (E)
(C)	Corrosive	Acute Hazardous Waste (H)
(R)	Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

U114 (T)	Ethylenebisdithiocarbamic acid, salts & esters
U115 (I,T)	Ethylene oxide
U116 (T)	Ethylenethiourea
U117 (I)	Ethyl ether
U118 (T)	Ethyl methacrylate
U119 (T)	Ethyl methanesulfonate
U120 (T)	Fluoranthene
U121 (T)	Methane, trichlorofluoro-
U122 (T)	Formaldehyde
U123 (C,T)	Formic acid
U124 (I)	Furan
U125 (I)	Furfural
U126 (T)	Glycidylaldehyde
U127 (T)	Hexachlorobenzene
U128 (T)	Hexachlorobutadiene
U129 (T)	Lindane
U130 (T)	Hexachlorocyclopentadiene
U131 (T)	Hexachloroethane
U132 (T)	Hexachlorophene
U133 (R,T)	Hydrazine
U134 (C,T)	Hydrogen fluoride
U135 (T)	Hydrogen sulfide
U136 (T)	Cacodylic acid
U137 (T)	Indeno[1,2,3-cd]pyrene
U138 (T)	Methyl iodide
U140 (I,T)	Isobutyl alcohol
U141 (T)	Isosafrole
U142 (T)	Kepone
U143 (T)	Lasiocarpine
U144 (T)	Lead acetate
U145 (T)	Lead phosphate
U146 (T)	Lead subacetate
U147 (T)	Maleic anhydride
U148 (T)	Maleic hydrazide
U149 (T)	Malononitrile
U150 (T)	Melphalan
U151 (T)	Mercury

Basis for listing or class of hazardous waste:

(I)	Ignitable	Toxicity Characteristic Waste (E)
(C)	Corrosive	Acute Hazardous Waste (H)
(R)	Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous Hazardous Waste/Constituent:

Waste Number:

U152 (I,T)	Methacrylonitrile
U153 (I,T)	Methanethiol
U154 (I)	Methanol
U155 (T)	Methapyrilene
U156 (I,T)	Methyl chlorocarbonate
U157 (T)	3-Methylcholanthrene
U158 (T)	4,4'-Methylenebis(2-chloroaniline)
U159 (I,T)	Methyl ethyl ketone (MEK)
U160 (R,T)	Methyl ethyl ketone peroxide
U161 (I)	Methyl isobutyl ketone
U162 (I,T)	Methyl methacrylate
U163 (T)	MNNG
U164 (T)	Methylthiouracil
U165 (T)	Naphthalene
U166 (T)	1,4-Naphthoquinone
U167 (T)	1-Naphthalenamine
U168 (T)	2-Naphthalenamine
U169 (I,T)	Nitrobenzene
U170 (T)	p-Nitrophenol
U171 (I,T)	2-Nitropropane
U172 (T)	N-Nitrosodi-n-butylamine
U173 (T)	N-Nitrosodiethanolamine
U174 (T)	N-Nitrosodiethylamine
U176 (T)	N-Nitroso-N-ethylurea
U177 (T)	N-Nitroso-N-methylurea
U178 (T)	N-Nitroso-N-methylurethane
U179 (T)	N-Nitrosopiperidine
U180 (T)	N-Nitrosopyrrolidine
U181 (T)	5-Nitro-o-toluidine
U182 (T)	Paraldehyde
U183 (T)	Pentachlorobenzene
U184 (T)	Pentachloroethane
U185 (T)	Pentachloronitrobenzene (PCNB)
U186 (I)	1,3-Pentadiene
U187 (T)	Phenacetin
U188 (T)	Phenol
U189 (R)	Phosphorous sulfide

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

U190 (T)	Phthalic anhydride
U191 (T)	Pyridine, 2-methyl-
U192 (T)	Pronamide
U193 (T)	1,3-Propane sultone
U194 (I, T)	1-Propanamine
U196 (T)	Pyridine
U197 (T)	p-Benzoquinone
U200 (T)	Reserpine
U201 (T)	Resorcinol
U202 (T)	Saccharin, and salts
U203 (T)	Safrole
U204 (T)	Selenium dioxide
U205 (R, T)	Selenium sulfide
U206 (T)	Streptozotocin
U207 (T)	1,2,4,5-Tetrachlorobenzene
U208 (T)	1,1,1,2-Tetrachloroethane
U209 (T)	1,1,2,2-Tetrachloroethane
U210 (T)	Tetrachloroethylene
U211 (T)	Carbon tetrachloride
U213 (I)	Tetrahydrofuran
U214 (T)	Thallium(I) acetate
U215 (T)	Thallium(I) carbonate
U216 (T)	Thallium(I) chloride
U217 (T)	Thallium(I) nitrate
U218 (T)	Thioacetamide
U219 (T)	Thiourea
U220 (T)	Toluene
U221 (T)	Toluenediamine
U222 (T)	o-Toluidine hydrochloride
U223 (R, T)	Toluene diisocyanate
U225 (T)	Bromoform
U226 (T)	Methyl chloroform
U227 (T)	1,1,2-Trichloroethane
U228 (T)	Trichloroethylene
U234 (R, T)	1,3,5-Trinitrobenzene
U235 (T)	Tris(2,3-dibromopropyl) phosphate
U236 (T)	Trypan blue

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

U237	(T)	Uracil mustard
U238	(T)	Ethyl carbamate (urethane)
U239	(I)	Xylene
U240	(T)	2,4-D, salts and esters
U243	(T)	Hexachloropropene
U244	(T)	Thiram
U246	(T)	Cyanogen bromide (CN)Br
U247	(T)	Methoxychlor
U248	(T)	Warfarin, and salts, when present at concentrations of 0.3% or less.
U249	(T)	Zinc phosphide, Zn_3P_2 when present at concentrations of 10% or less.
U271		Carbamic acid, {1-[(butylamino)carbonyl]-1H-benzamidazol-2-yl}-, methyl ester (Benomyl)
U277		Carbamodithioic acid, diethyl-, 2-chloro-2-propenyl esters (Sulfallate)
U278		1,3-Benzodioxol-4-ol, 2,2-dimethyl-, methyl carbamate (Bendiocarb)
U279		1-Naphthalenol, methylcarbamate (Carbaryl)
U280		Carbamic acid, (3-chlorophenyl)-, 4-chloro-2-butynyl ester (Barban)
U328	(T)	o-Toluidine
U353	(T)	p-Toluidine
U359	(T)	Ethanol, 2-ethoxy-
U364		1,3-benzodioxol-4-ol, 2,2-dimethyl-, (Bendiocarb phenol)
U365		1H-Azepine-1-carbothioic acid, hexahydro-, S-ethyl ether (Molinate)
U366		2H-1,3,5-thiadiazine-2-thione, tetrahydro-3,5-dimethyl- (Dazomet)
U367		7-Benzofuranol, 2,3-dihydro-2,2-dimethyl- (Carbofuran phenol)
U372		Carbamic acid, 1H-benzomidazol-2-yl, methyl ester (Carbendazim)
U373		Carbamic acid, phenyl-, 1-methylethyl ether (Propham)
U375		Carbamic acid, butyl-, 3-ido-2-propynyl ester

Basis for listing or class of hazardous waste:

(I)	Ignitable	Toxicity Characteristic Waste (E)
(C)	Corrosive	Acute Hazardous Waste (H)
(R)	Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

	(Troysan Plyphase)
U376	Carbamodithioic acid, dimethyl-, tetraanhydrosulfide with orthothioselenious acid (Seleneum dimethyldithiocarbamate)
U377	Carbamodithioic acid, methyl-, -monopotassium salt (Potassium n-methyldithiocarbamate)
U378	Carbamodithioic acid, (hydroxymethyl)methyl-, monopotassium salt (Busan 40)
U379	Carbamodithioic acid, dibutyl, sodium salt (Sodium dibutyldithiocarbamate)
U381	Carbamodithioic acid, diethyl-, sodium salt (Sodium diethyldithiocarbamate)
U382	Carbamodithioic acid, dimethyl-, sidium salt (Dibam)
U383	Carbamodithioic acid, dimethyl, porassium salt (Potassium dimethyl dithiocarbamate) (Busan 85)
U384	Carbamodithioic acid, methyl-, monosodium salt (Metam Sodium)
U385	Carbamodithioic acid, dipropyl-, S-propyl ester (Vemolate)
U386	Carbamodithioic acid, cyclohexylethyl, S-ethyl ester (Cycloate)
U387	Carbamodithioic acid, dipropyl-, S-(phenylmethyl) ester (Prosulfocarb)
U389	Carbamodithioic acid, bis(1-methylethyl)-, S-(2,3,3-trichloro-2-propenyl) ester (Triallate)
U390	Carbamodithioic acid, dipropyl-, S-ethyl ester (EPTC)
U391	Carbamodithioic acid, butylethyl-, E-propyl ester (Pebulate)
U392	Carbamodithioic acid, bis(2-methylpropyl)-, S-ethyl ester (Butylate)
U393	Copper, tris(dimethylcarbamodithioato- S,S')-, (Copper dimethyldithiocarbamate)
U394	Ethanimidothioic acid, 2-(dimethylamino)-N-hydroxy-2-oxo-, methyl ether (A2213)
U395	Ethanol, 2,2'-oxybis-, dicarbamate (Reactacreeze)

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC

Waste List

EPA Hazardous

Hazardous Waste/Constituent:

Waste Number:

	4-DEG)
U396	Iron, tris(dimethyl carbamodithioato-S,S')-((Ferbam)
U400	Piperidine, 1,1'-(tetrathiodicarbonothioyl)-bis- (Sulfads)
U401	Bis(dimethyl thiocarbamoyl) sulfide (Tetramethylthiuram monosulfide)
U402	Thioperoxydicarbonic diamide, tetrabutyl (Butyl Tuads)
U403	Thioperoxydicarbonic diamide, tetraethyl (Disulfram)
U404	Ethanamine, N,N-diethyl- (Triethylamine)
U407	Zinc, bis(diethylcarbamodithioato-S,S') (Ethyl Ziram)
U409	Carbamic acid, [1,2- phenylenebis(iminocarbonothioyl)]bis-, dimethyl ester (Thiophanate-methyl)
U410	Ethanomidothoic acid, N,N'- {thiobis[(methylimino)carbonyloxy]}bis-, dimethyl ester (Thiodicarb)
U411	Phenol, 2-(1-methylethoxy)-, methylcarbamate (Propoxur)

Basis for listing or class of hazardous waste:

(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC
Waste List

Other Wastes

- o Solid wastes as defined by 40 CFR 261.2
- o Waste from a Hazardous Waste Facility or Site, or waste resulting from activities under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) including but not limited to personnel protective equipment, discarded containers of laboratory chemicals (lab packs), lab equipment, clothing, debris from spills or cleanup and floor sweepings.

Basis for listing or class of hazardous waste:	
(I) Ignitable	Toxicity Characteristic Waste (E)
(C) Corrosive	Acute Hazardous Waste (H)
(R) Reactive	Toxic Waste (T)

Clean Harbors Kansas, LLC
RCRA Permit Application
Section H
Contingency/Emergency Plan
Appendix H-B - Emergency Response Coordinator Authorization

Appendix H-B

Emergency Response Coordinator Authorization

December 19, 2001

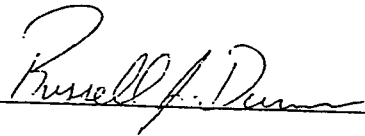
August 27, 1997

To: File
Contingency Plan

From: Russell Dunn, Facility Manager

Re: Emergency Response Coordinator Authorization to Commit
Resources

Pursuant to 40 CFR 264.55, the Emergency Response Coordinator, as listed in the facility Contingency Plan and Emergency Procedure, (item 14 in the facility Part B Permit), who responds to an incident described therein, has the authority to commit all company resources necessary to carry out the Contingency Plan.



Russell Dunn
Facility Manager

cc: T. Kent, LESI Regional Office
D. Hagan, LESI, Columbia
listed ERCs

regnt73a.rkr

Clean Harbors Kansas, LLC
RCRA Permit Application
Section H
Contingency/Emergency Plan
Appendix H-C - Emergency Telephone Listing of Local Authorities

Appendix H-C

Emergency Telephone Listing of Local Authorities

December 19, 2001

Clean Harbors Kansas, LLC
RCRA Permit Application
Section H
Contingency/Emergency Plan
Appendix H-C - Emergency Telephone Listing of Local Authorities

Emergency Telephone Listing of Local Authorities

Clean Harbors Kansas, LLC
2549 North New York Avenue
Wichita, Kansas, 67219

Agency	Office Telephone	Emergency Telephone
Sedgwick Co. EMS	316/383-7994	911
St. Francis Emergency Center	316/268-5052	316/268-5052
Wichita Fire Dept.	316/268-4451	911
WFD HazMat Team	316/838-8655	911
Wichita Police Dept.	316/268-4239	911
KDHE	785/296-1079	785/296-0614
EPA Region VII	913/281-0991	913/281-0991
National Response Center (NRC)	800/424-8802	800/424-8802
Derby Refinery After 5:00 PM	316/262-5703	[REDACTED]
Union Pacific	316/268-9433	[REDACTED]

Ex. 6 PII

Note: Facility Telephone Numbers:
Office: 316/269-7400
Beeper: Beeper utilized when Emergency
Response Coordinators are otherwise
unavailable; see Table H-1 for list of ERCs.

December 19, 2001

Safety-Kleen (Wichita), Inc.
RCRA Permit Application
Section H
Contingency/Emergency Plan
Appendix H-D - Coordination Agreement
Letters

Appendix H-D

Coordination Agreement Letters

December 19, 2001



Permit Set

November 20, 1998

Wichita Fire Department
City Hall, Eleventh Floor
455 N. Main Street
Wichita, Kansas 67202
Attn: Chief Rudd, Hazardous Materials Response Team

Re: **Facility Contingency/Emergency Plan**
Safety-Kleen (Wichita) Inc., EPA ID No. KSD007246846
formerly known as Laidlaw Environmental Services (Wichita)

Dear Chief Rudd:

Enclosed please find the latest revision of the Contingency/Emergency Plan for the Safety-Kleen (Wichita) facility located at 2549 N. New York, dated November 20, 1998. The Contingency Plan required under Subpart D of 40 CFR 264 has been amended as required by section 264.4 to reflect changes in the list of Emergency Response Coordinators: the pager numbers for Mike Green and Ron Robertson have been changed.

A replacement page is provided for Table H-1, page 7. Simply replace page 7 in your copy of our Plan with the new page.

Please note that the name of the facility has changed to Safety-Kleen (Wichita) from Laidlaw Environmental Services (Wichita).

If you have any questions regarding these matters, you may contact Rusty Dunn or myself at the address or phone number shown below. Thank you for your assistance.

Sincerely,

Ron Robertson
Facility Environmental Manager

cc: W. Watson, WPD
D. Mauck, SCEMS
M. Williams, Via Christi
J. Coslett, LEPC
C. Taylor, SK Columbia
D. Cox, KDHE
R. Dunn, SKW



November 20, 1998

Via Christi Emergency Services
929 N. St. Francis Street
Wichita, Kansas 67214
Attn: Marcie Williams

Re: **Facility Contingency/Emergency Plan**
Safety-Kleen (Wichita) Inc., EPA ID No. KSD007246846
formerly known as Laidlaw Environmental Services (Wichita)

Dear Ms. Williams:

Enclosed please find the latest revision of the Contingency/Emergency Plan for the Safety-Kleen (Wichita) facility located at 2549 N. New York, dated November 20, 1998. The Contingency Plan required under Subpart D of 40 CFR 264 has been amended as required by section 264.4 to reflect changes in the list of Emergency Response Coordinators: the pager numbers for Mike Green and Ron Robertson have been changed.

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If you have any questions regarding these matters, you may contact Rusty Dunn or myself at the address or phone number shown below. Thank you for your assistance.

Sincerely,

Ron Robertson
Facility Environmental Manager

cc: C. Taylor, SK Columbia
D. Cox, KDHE
R. Dunn, SKW
D. Rudd, WFD
D. Mauck, SCEMS
J. Coslett, SCLEPC
W. Watson, WPD



November 20, 1998

City of Wichita Police Department
455 N. Main
Wichita, Kansas 67202
Attn: Chief William Watson

Re: **Facility Contingency/Emergency Plan**
Safety-Kleen (Wichita) Inc., EPA ID No. KSD007246846
formerly known as Laidlaw Environmental Services (Wichita)

Dear Chief Watson:

Enclosed please find the latest revision of the Contingency/Emergency Plan for the Safety-Kleen (Wichita) facility located at 2549 N. New York, dated November 20, 1998. The Contingency Plan required under Subpart D of 40 CFR 264 has been amended as required by section 264.4 to reflect changes in the list of Emergency Response Coordinators: the pager numbers for Mike Green and Ron Robertson have been changed.

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Sincerely,

Ron Robertson
Facility Environmental Manager

cc: M. Williams, Via Christi
C. Taylor, SK Columbia
D. Cox, KDHE
R. Dunn, SKW
D. Rudd, WFD
D. Mauck, SCEMS
J. Coslett, SCLEPC



November 20, 1998

Sedgwick County Local Emergency Planning Committee
525 N. Main, Room B-10
Wichita, Kansas 67202
Attn: John Coslett, Director

Re: **Facility Contingency/Emergency Plan**
Safety-Kleen (Wichita) Inc., EPA ID No. KSD007246846
formerly known as Laidlaw Environmental Services (Wichita)

Dear Mr. Coslett:

Enclosed please find the latest revision of the Contingency/Emergency Plan for the Safety-Kleen (Wichita) facility located at 2549 N. New York, dated November 20, 1998. The Contingency Plan required under Subpart D of 40 CFR 264 has been amended as required by section 264.4 to reflect changes in the list of Emergency Response Coordinators: the pager numbers for Mike Green and Ron Robertson have been changed.

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Please note that the name of the facility has changed to Safety-Kleen (Wichita) from Laidlaw Environmental Services (Wichita).

If you have any questions regarding these matters, you may contact Rusty Dunn or myself at the address or phone number shown below. Thank you for your assistance.

Sincerely,

Ron Robertson
Facility Environmental Manager

cc: W. Watson, WPD
M. Williams, Via Christi
C. Taylor, SK Columbia
D. Cox, KDHE
R. Dunn, SKW
D. Rudd, WFD
D. Mauck, SCEMS



November 20, 1998

Sedgwick County Emergency Medical Services
P.O. Box 607
Wichita, Kansas 67201-607
Attn: Dennis Mauck, Assistant Director of Operations

Re: **Facility Contingency/Emergency Plan**
Safety-Kleen (Wichita) Inc., EPA ID No. KSD007246846
formerly known as Laidlaw Environmental Services (Wichita)

Dear Mr. Mauck:

Enclosed please find the latest revision of the Contingency/Emergency Plan for the Safety-Kleen (Wichita) facility located at 2549 N. New York, dated November 20, 1998. The Contingency Plan required under Subpart D of 40 CFR 264 has been amended as required by section 264.4 to reflect changes in the list of Emergency Response Coordinators: the pager numbers for Mike Green and Ron Robertson have been changed.

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Please note that the name of the facility has changed to Safety-Kleen (Wichita) from Laidlaw Environmental Services (Wichita).

If you have any questions regarding these matters, you may contact Rusty Dunn or myself at the address or phone number shown below. Thank you for your assistance.

Sincerely,

Ron Robertson
Facility Environmental Manager

cc: W. Watson, WPD
M. Williams, Via Christi
J. Coslett, LEPC
C. Taylor, SK Columbia
D. Cox, KDHE
R. Dunn, SKW
D. Rudd, WFD

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Section I
Training Program

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Training Program

List of Appendices

Appendix I-A, Typical Job Descriptions, Duties, and Training
Appendix I-B, Introductory Training Seminar Outline
Appendix I-C, Example Introductory Training Seminar Test
Appendix I-D, Typical Job-Specific Training Topics

List of Acronyms

Clean Harbors Kansas, LLC (CHK)
Health, Safety and Training Manager (HSTM)
Material Safety Data Sheets (MSDS)

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Section I
Training Program

I-1 Outline of Training Program: 40 CFR 270.14 (b) (12) and
270.16

This training program has been developed in accordance with the regulatory requirements of 40 CFR Parts 270 and 264. The program is designed to provide the information needed by Clean Harbors Kansas, LLC (CHK) personnel to assist them in understanding the processes and materials with which they are working and the potential safety and health hazards associated with those processes and materials. The training program also facilitates instruction of facility personnel in the proper procedures for preventing and reacting effectively to emergency situations. Where appropriate, the training program provides information regarding inspection, repair, and replacement of facility emergency equipment.

The goal of the training program is to train personnel to perform their job functions in an efficient and safe manner, and in compliance with applicable regulations and permit requirements.

I-1a Job Titles and Duties: 40 CFR 264.16 (d) (1), (2) and (3)

As required in 40 CFR 264.16, records at the facility will

Clean Harbors Kansas, LLC
RCRA Permit Application
Section I
Training Program

include:

- . the job titles for positions at the facility related to hazardous waste management,
- . the names of the employees filling these jobs,
- . a description of these jobs including duties, and
- . a description of the minimum qualifications for employees filling these jobs.

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The following are job titles that are most relevant to the compliant operation of CHK

- . Facility Manager
- . Operations Manager
- . Facility Engineer
- . Laboratory Manager/Senior Chemist
- . Laboratory Technician
- . Facility Inspector
- . Health, Safety and Training Manager
- . Operator
- . Operator Helper
- . Secretary/clerk

Examples of typical job descriptions are contained in Appendix I-A, Typical Job Descriptions, Duties, and Training. These job descriptions include a summary of the duties, qualifications, and training for the job titles listed above.

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I-1b Training Content, Frequency and Techniques: 40 CFR
264.16(a)(3), 264.16(c) and 264.16(d)(3)

Initial training of facility employees will consist of:

- . 24 hours of safety training as described by 29 CFR 1910.120(p)(7), for operations personnel,
- . an introductory training seminar, and
- . job specific training.

Each employee must complete the introductory training seminar prior to working without direct supervision in any hazardous waste management area at the facility. The introductory training seminar will last approximately sixteen (16) hours. The topics covered during this seminar include facility specific items such as the Contingency/Emergency Plan, as well as basic training in general topics such as chemistry and occupational safety. An outline of the seminar is provided in Appendix I-B, Introductory Training Seminar Outline. After completion of the introductory training seminar, the employees will be tested to evaluate their comprehension of the information presented. An example of the type of test employees may be given is provided in Appendix I-C,

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Example Introductory Training Seminar Test.

In addition to the introductory training seminar, employees will be provided with job-specific training such as on-the-job training. The type and content of the job-specific training will depend on the skills and level of expertise demanded by the job.

Appendix I-D, Typical Job-Specific Training Topics includes a list of typical topics for job-specific training that will be provided to the appropriate employees. The job-specific training completes the employee's initial training. Employees will not be allowed to perform unsupervised, hazardous waste management duties prior to completion of initial training.

Continuing training will be provided for employees performing certain jobs after the employee completes the initial training. At a minimum, the continuing training will consist of an annual review of the introductory training seminar.

Training techniques will vary depending on the subject.

Typically, training techniques may involve classroom lecture, on-the-job, and audio/visual demonstration. Training instructors

Clean Harbors Kansas, LLC
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will include personnel who have experience and/or training in that area and outside instructors such as manufacturer's representatives. On-the-job training is conducted by qualified facility personnel.

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Training Program

I-1c Director of the Training Program: 40 CFR 264.16(a) (2)

The Health, Safety and Training Manager (HSTM) will administer the training program. The duties and qualifications of the HSTM are provided in Appendix I-A. The duties of the HSTM include maintaining records which demonstrate that personnel are receiving the appropriate training in accordance with the training program. The minimum qualifications for the HSTM will be a college degree and/or equivalent experience with a knowledge of regulatory and safety requirements. The HSTM will be trained in hazardous waste management procedures.

Clean Harbors Kansas, LLC
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I-1d Relevance of Training to Job Position: 40 CFR 264.16(a)(2)

It is important that employees be trained and possess a knowledge of the concepts required to perform their duties. Each employee engaged in hazardous waste management activities must be able to act correctly and safely while fulfilling job responsibilities.

In addition to the introductory training seminar which all employees will attend, relevant job-specific training will be provided to appropriate employees. For example, if an employee is in a supervisory or management position requiring an understanding of the Kansas rules for the management of hazardous waste, then the employee is trained accordingly. The job descriptions contained in Appendix I-A include examples of job-specific training which are relevant to the position. Appendix I-D contains outlines of typical topics for job-specific training.

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Section I
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I-1e Training for Emergency Action/Response: 40 CFR 264.16(a) (3)

The introductory training seminar includes training on the Contingency/Emergency Plan. Emergency action procedures are included in the Contingency/Emergency Plan. In accordance with 29 CFR 1910.120(p) (8) and CHK's Contingency/Emergency Plan, the facility may evacuate employees in the event of an emergency, and may not have a specially trained Emergency Response Team. The training topics provided during the seminar regarding the Contingency/Emergency Plan are provided in Appendix I-B. The seminar is designed to train employees to act appropriately during emergency situations.

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In addition to the introductory training seminar, appropriate employees will receive job-specific training on emergency procedures, equipment, and systems. Where applicable, this job-specific training will include:

- . waste identification;
- . waste processing procedures;
- . instruction on machinery operation;
- . procedures for the shutdown of operations;
- . instruction on safety equipment;
- . procedures for using, inspecting, repairing, and replacing facility emergency equipment;
- . procedures for using the communications or alarm systems;
- . procedures for fires or explosions; and
- . procedures for incidents of potential soil or ground-water contamination.

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I-2 Implementation of Training Program: 40 CFR 264.16(b),
264.16(d)(4) and 264.16(e)

The HSTM will monitor the training program to ensure that all employees complete their initial training and an annual review of the introductory training seminar. The initial training must be completed within six (6) months of either:

- . initial employment,
- . assignment to CHK if the individual is employed by Clean Harbors at the time of the assignment (unless equivalent training was received in his/her previous assignment), or
- . transfer to a new position within the facility, if the employee has not previously received the appropriate training.

In the last two (2) cases, the employee will only be required to receive instruction in those portions of the initial training for which the employee has not yet been trained. For example, an employee who transfers from one position to another within CHK will not be required to repeat the introductory training seminar

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or any job-specific training the employee has already completed.

Records of the training provided to employees as part of the training program will be maintained at the facility. These training records will include:

- . date of training,
- . training topics,
- . instructor's name,
- . employees in attendance, and
- . any test results, if appropriate.

Training records for current employees will be maintained until closure of the facility. Training records for former employees will be maintained for at least three (3) years from the date the employee last worked at the facility. Employee training records may accompany personnel transferred to CHK from another facility operated by Clean Harbors.

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APPENDIX I-A

TYPICAL JOB DESCRIPTIONS, DUTIES AND TRAINING

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JOB TITLE: Facility Manager

JOB DESCRIPTION AND DUTIES: Responsible for the safe and efficient management of operations at the facility. Approves the development of all records and manuals at the facility. Responsible for the enforcement of facility safety programs. Coordinates all facility operations with corporate office.

QUALIFICATIONS: College degree and substantial experience in hazardous waste management. Knowledge of State and Federal Regulations dealing with hazardous waste management.

TRAINING: Introductory training seminar, safety training, technical training, hazardous waste management training.

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JOB TITLE: Operations Manager

JOB DESCRIPTION AND DUTIES: Responsible for the management of facility operations. Coordinates all material handling operations in the facility. Responsible for the enforcement of all safety programs. Assists in formulating all records and manuals at the facility. Assumes management of the facility as required.

QUALIFICATIONS: College degree and/or experience in hazardous waste management operations including regulations.

TRAINING: Introductory training seminar, operations training, safety training, technical training, hazardous waste management training.

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JOB TITLE: Facility Engineer

JOB DESCRIPTION AND DUTIES: Responsible for engineering activities at the facility. Provides engineering support on special projects at the facility. Performs engineering analyses as required to optimize facility operations.

QUALIFICATIONS: Degree in engineering and experience in hazardous waste management.

TRAINING: Introductory training seminar, safety training.

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JOB TITLE: Laboratory Manager/Senior Chemist

JOB DESCRIPTION AND DUTIES: Responsible for the routine operation of the laboratory including organizing and maintaining all laboratory records. Supervises technical employees to insure that all analyses are performed correctly and in a timely manner. Responsible for the analysis of incoming waste samples and designating the appropriate treatment and disposal for them. Participates in environmental monitoring as needed.

QUALIFICATIONS: Degree in Chemistry or Physical Science which included a minimum of sixteen (16) hours of chemistry. A knowledge of chemistry and general laboratory experience such as would be acquired by four (4) years of academic study in the field of chemistry supplemented by at least three (3) years experience performing hands-on analytical laboratory chemistry work.

TRAINING: Introductory training seminar, safety training, technical training, hazardous waste management training.

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JOB TITLE: Laboratory Technician

JOB DESCRIPTION AND DUTIES: Responsible for the routine operation of the laboratory under the direction of the Senior Chemist. Performs analysis on pre-shipment samples. Assists in determining the designation of treatment and disposal of customer waste. Responsible for assisting in maintaining all laboratory records and inventory. Responsible for the collection and analysis of environmental samples.

QUALIFICATIONS: Two (2) years college including a minimum of thirteen (13) college credit hours of chemistry plus other science related courses or a minimum of two (2) years laboratory experience.

TRAINING: Introductory Training, First Aid and CPR, Continued Safety Training, Technical Training.

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JOB TITLE: Facility Inspector

JOB DESCRIPTION AND DUTIES: Responsible for the timely and effective completion of all facility inspections. Maintains tank gauging records and all other regulatory inspection records for the facility.

QUALIFICATIONS: One (1) year's experience in hazardous waste disposal operations.

TRAINING: Introductory training seminar, operations training, safety training.

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JOB TITLE: Health, Safety and Training Manager

JOB DESCRIPTION AND DUTIES: Formulates and implements facility Health and Safety Programs. Ensures that personal protection equipment is available for facility employees. Responsible for routine inspections of facility safety equipment. Responsible for the formulation of the facility Training Program. Responsible for keeping records of Health, Safety, and Training Programs which demonstrate compliance with Federal and State regulations.

QUALIFICATIONS: College degree and/or equivalent experience working with State and Federal regulations, including OSHA regulations.

TRAINING: Introductory training seminar, operations training, safety training, technical training, hazardous waste management training.

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JOB TITLE: Operator

JOB DESCRIPTION AND DUTIES: Responsible for the assignment and effective completion of all field activities during a shift. Coordinates operations with area supervisors. Assists in the enforcement of company policy and safety regulations.

QUALIFICATIONS: A minimum of one (1) year experience in industrial waste operation, including a basic chemistry knowledge.

TRAINING: Introductory training seminar, operations training, safety training.

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JOB TITLE: Operator Helper

JOB DESCRIPTION AND DUTIES: Responsible for the effective and safe completion of all assigned facility operations under the direction of the Operations Manager and/or Operator.

QUALIFICATIONS: Equipment/process experience preferred.

TRAINING: Introductory training seminar, operations training, safety training.

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JOB TITLE: Secretary/clerk

JOB DESCRIPTION AND DUTIES: Responsible for administrative support activities such as typing, answering the phone, filing and recordkeeping.

QUALIFICATIONS: High school diploma or equivalent with office experience.

TRAINING: Introductory training seminar.

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Appendix I-B - Introductory Training Seminar Outline

APPENDIX I-B
INTRODUCTORY-TRAINING SEMINAR OUTLINE

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Appendix I-B - Introductory Training Seminar Outline

INTRODUCTORY-TRAINING SEMINAR OUTLINE

I. ORIENTATION: (2 hours)

1. Introduction
2. New Employee Communication Checklist
3. Company History
4. Facility Tour

II. REVIEW OF OPERATIONS: (4 hours)

1. General Facility Description
2. Contingency Plan
 - . Contingency plan implementation procedures
 - . Access and use of communication and alarm systems
 - . Response to fires, explosions, spills and/or releases
 - . Site evacuation procedures

III. CHEMICAL TRAINING: (2 hours)

Basic understanding of the characteristics of acids, caustics, and solvents

1. Basic Chemistry
2. Incompatible Wastes

IV. SAFETY TRAINING: (4 hours)

Facility safety requirements and emergency equipment including location and capabilities

1. Facility Housekeeping
2. Job Specific Safety Equipment
3. Eye & Face Safety
 - . Equipment location, inspection, repair and operation

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Appendix I-B - Introductory Training Seminar Outline

4. Respiratory Protection
 - . Equipment location, inspection, repair and operation
5. Emergency Equipment
 - . Equipment location, inspection, repair and operation

V. INTRODUCTORY JOB-SPECIFIC TRAINING: (RCRA) (4 hours)

1. Office Procedures - (Clerical & Technical Personnel)
 - . Telecommunication System
 - . Load Arrival Procedures
 - . Filing System
 - . Log Maintenance
2. Technical Training - (Laboratory and Supervisory Personnel)
 - . Office Procedures
 - . Load Arrival Procedures
 - . Truck Sampling Procedures
3. Operational Training - (Operations Personnel)
 - . Review Job Description
 - . Truck Unloading Procedures
 - . Equipment Operation

VI. Clean Harbors INITIAL TRAINING TEST: (RCRA) (30 minutes)
See Appendix I-C for example test

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Appendix I-C - Example Introductory Training Seminar Test

APPENDIX I-C

EXAMPLE INTRODUCTORY TRAINING SEMINAR TEST

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Appendix I-C - Example Introductory Training Seminar Test

EXAMPLE INTRODUCTORY TRAINING SEMINAR TEST

- 1) What safety gear is required for general facility activities?
- 2) Who is responsible for facility housekeeping and why?
- 3) When and where should you wear eye protection?
- 4) When is it necessary to wear a face shield?
- 5) What areas are designated for "SMOKING"?
- 6) How do you gain access to the loud speaker system?
- 7) What is the "EMERGENCY NOTIFICATION LIST"?
- 8) Where are the "EYEWASH STATIONS" in your work area and how do they operate?
- 9) When and why should you have respiratory protection?
- 10) What are some of the dangers associated with acids?
- 11) Can "fumes" be dangerous to your health?
- 12) What is a Contingency Plan and where is it located?
- 13) What are the two kinds of "EMERGENCY ALARMS"?
- 14) What is the proper procedure for reporting a fire?
- 15) Where are the gathering points in case of an evacuation?
- 16) Name the location of a fire extinguisher in your work area?
- 17) What is the "BUDDY SYSTEM" and why is it used?
- 18) What is the best defense against injury?

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Appendix I-D, Typical Job-Specific Training Topics

APPENDIX I-D
TYPICAL JOB-SPECIFIC TRAINING TOPICS

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Appendix I-D, Typical Job-Specific Training Topics

TYPICAL JOB-SPECIFIC TRAINING TOPICS

OPERATIONS TRAINING:

- . Site Security
 - . Security procedures and equipment
- . Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment
- . Preparedness and Prevention
 - . Access to and use of internal communications and alarm systems
 - . Access to and use of telephone for summoning off-site help
 - . Access to and use of portable fire extinguishers, spill control equipment, and decontamination equipment
 - . Access to and use of firewater system
 - . Shut down of operations
- . Contingency/Emergency Plan
 - . Contingency/Emergency Plan implementation procedures
 - . Access and use of communications and alarm systems
 - . Response to fires, explosions, spills, groundwater contamination, and air emissions
 - . Site evacuation procedures
 - . Job-specific use and maintenance of emergency equipment
- . Hazard Communication Manual
 - . Right-to-Know
 - . Material Safety Data Sheets (MSDS)
- . Tank Operation and Controls
 - . Site procedures and 40 CFR Part 264, Subpart J
- . Use and Management of Containers
 - . Site procedures and 40 CFR Part 264, Subpart I

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Appendix I-D, Typical Job-Specific Training Topics

SAFETY TRAINING:

- . Industrial Hygiene and Decontamination Procedures and policies for decontamination
- . Protective Equipment
 - . Job-specific Protective Equipment
- . First Aid - General Information
 - . Wound and burn management
- . Care in Handling Waste
 - . Procedures for safety in handling and treating wastes
- . Loading and Unloading of Trucks
 - . Site procedures for trucks
- . Specialized Equipment Operation
 - . Procedures for operation and maintenance of heavy equipment
- . Basic Chemistry
 - . Safety in handling chemicals

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Appendix I-D, Typical Job-Specific Training Topics

TECHNICAL TRAINING:

- . Updating of Waste Stream Approvals
 - . Customer profile updates
- . Manifest Systems
 - . Proper manifest preparation
- . Records
 - . Site-specific records system
- . Sampling and Approval Procedures
 - . Procedure for sampling trucks properly and waste stream approval
- . Waste Identification and Segregation
 - . Procedures for identifying and handling incompatible materials

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Appendix I-D, Typical Job-Specific Training Topics

HAZARDOUS WASTE MANAGEMENT TRAINING

- . Overview of RCRA hazardous waste management regulations
- . Proper characterization and identification of hazardous wastes
- . Land Disposal Restrictions
- . Overview of DOT hazardous waste management regulations